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THE GOVERNMENT OF THE PHILIPPINE ISLANDS
DEPARTMENT OF PUBLIC INSTRUCTION
PHILIPPINE HEALTH SERVICE

REPORT OF THE
PHILIPPINE HEALTH SERVICE

FOR THE FISCAL YEAR FROM JANUARY 1
TO DECEMBER 31, 1916

J. D. LONG, M. D.
DIRECTOR OF HEALTH

MANILA
BUREAU OF PRINTING
1917

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ANNUAL REPORT OF THE PHILIPPINE HEALTH SERVICE, FISCAL YEAR 1916.

DEPARTMENT OF PUBLIC INSTRUCTION,
PHILIPPINE HEALTH SERVICE,
Manila, April 24, 1917.

SIR: I have the honor to transmit herewith the annual report of the Philippine Health Service for the fiscal year ending December 31, 1916.

ROUTINE WORK.

The routine work of the Service was carried on in an entirely satisfactory manner, and all work was gotten out and handled promptly. The various divisions of the Service coöperated splendidly and, almost without exception, real interest and enthusiasm in the work of the Service was constantly manifested by the various officers and employees.

EPIDEMIC DISEASES.

With the exception of cholera, no epidemic diseases were present in a manner to require much exertion for their control.

CHOLERA.

Cholera was present throughout the year, but assumed only slight proportions until the month of May, when in spite of all efforts to control it, it began to make its appearance in various places. A total of 12,847 cases and 7,986 deaths occurred in the Islands during the year. Of this total 1,214 cases and 513 deaths occurred in Manila and 11,633 cases and 7,473 deaths occurred in the various provinces. At the end of the year Manila was to all intents and purposes free, and only scattered cases remained in the provinces.

Cholera during 1916 was somewhat unusual in its behavior, and as it was realized early that the situation presented serious aspects, extraordinary efforts were put forth, but all that could be accomplished was to hold the disease down to a minimum of cases and eradicate it as soon as possible, whenever it appeared. It was realized that conditions were likely to be serious for two reasons, namely, the disease would make its appearance practically simultaneously in widely separated places, places so widely separated that existing means of transportation could not have carried the infection from one place to another, a careful study of transportation facilities, schedules, etc., practically confirmed these facts; secondly, after the disease made its appearance in a place, while our measures were able to control the disease and prevent the occurrence of any great number of cases, or would promptly and effectively reduce the number of cases, to completely eradicate the disease was a difficult matter; cases would continue to crop up from time to time in ones and twos for quite a period after, in accordance with previous experience, the disease should have disappeared.

Due to the above facts it was practically agreed by all that it was essentially a "Carrier epidemic,"—that is, an epidemic started by cholera carriers and kept going, after the time it would ordinarily have been controlled, by cholera carriers.

Study of the reports of the Manila division, of Bilibid prison, and of the provincial division will throw further light on this subject. It has been realized for some time that there is much still to be learned as to why cholera persists in the Philippines, and as to the reasons for its periodical appearance in epidemic form. Considerable valuable information was obtained in this regard during the year, but it is not as yet in sufficiently exact form to put it forth in the form of a definite statement.

Charts showing barometric pressures, atmospheric temperatures, and humidity as compared to cholera incidence, were prepared with the coöperation and assistance of the Weather Bureau, and are now being studied, there are apparently some related factors to be seen, but so far they are so elusive that nothing definite can be stated as yet; it may be, that there exist additional causative factors which must operate synchronously to produce a cholera outbreak, which have not as yet been suspected. The only definite and constant causative factor discovered so far is the constant presence of cholera carriers in the community. As a precautionary measure, a register is now being kept of the names and addresses of all recovered cases and known carriers of cholera, and they will be examined from time to time in order to learn as far in advance as possible of the impending approach of an outbreak.

The work of Schobl of the Bureau of Science, and others, has demonstrated pretty conclusively that when a cholera carrier is given a severe purge or when he ingests food or other substances which have the effect of producing a severe purge the carrier frequently is converted into an actual case. The usual history of the first case of cholera in a community is as follows: No cholera has been present for months possibly, an individual, usually one of the very poor class, has gone to work or fishing early in the morning, and has been exposed to the rain and has been thoroughly wet all day; upon his return home completely exhausted, soaked to the skin, and very hungry, he eats excessively of any food that happens to be in the house, as often as not rice and fish that very probably has been cooked in the morning and kept in a covered vessel all day; that night he has an attack of "cholera morbus," with vomiting and purging, cramps etc., and the next day has cholera and probably dies; this is the usual focus from which the disease spreads throughout the town. Of course not every person that has an experience similar to the above develops cholera, but it is believed, that the majority or at least a large percentage of cholera *carriers* that have a similar experience are very likely to develop the disease.

An experience that would seem to be confirmatory of the above was had in the city of Manila during November and December (see report of Manila sanitation division). There had been no cholera in the city since November 14, on the 28th two cases occurred, on the 29th four cases, on the 30th sixteen cases, on December 1 eighteen cases, on December 2 fifty-six cases. This rapid increase pointed to some infected food in general use as the probable causative agent. The markets were at once investigated and it was learned that on the 27th and 28th of November unusual quantities of shrimp and small fish had appeared in the markets; they soon began to decompose and the sanitary inspectors ordered their condemnation and destruction; this was the signal for the fish vendors to lower their prices so as to unload their stock promptly and thus avoid loss, the poorer class of course bought extensively; as soon as these facts were definitely known on December 3, the sale of shrimp and shell fish was strictly prohibited and stocks wherever found were confiscated and destroyed; the result was at once apparent; December 3 had fifty-one cases, December 4, twenty-eight; December 5, twenty; December 6, five; December 7, six; December 8, five; December 9, four, and so on till the disease gradually disappeared. Total, 215 cases in twelve days.

The city of Manila has a population of (Health Census, 1914) 266,943; the average number of cholera carriers found during 1916 was .67 per cent in 243,974 examinations; there were then presumably about 1,634 carriers in Manila; it is presumed that ptomaine poisoning occurring among these carriers acted as the purge which converted a number into cases; it is known that numbers of ptomaine cases occurred which did not develop cholera. Bacteriological confirmation of many of the cases was lacking, supposedly due to the excessive purging and the rush attendant upon such a sudden influx of cases; the clinical indications were marked, collapse and suppression of urine being especially prominent, the average mortality was about 30 per cent in the final analysis, which conforms very closely to the usual cholera mortality in San Lazaro, in cases arriving in a living condition. The unprecedented catch of fish and shrimp, and their prompt putrefaction was later accounted for by the fact that on November 27, 28, and 29 the bay was invaded over very extensive areas by an infusorium known as peridinium, which either stupefied or killed the fish in such enormous quantities that fishermen stated they were able to skim them from the surface in basketfuls, probably already in the beginning stages of decomposition.

INTERESTING FEATURES IN THE CONTROL OF CHOLERA.

Early in the outbreak it was decided to establish temporary emergency cholera hospitals as a means of removing foci (cases) of infections to a common center where they could be effectively controlled, and also for the purpose of reducing mortality. Considerable hesitation and doubt as to the efficacy of the measure was generally expressed, as the people generally did not take kindly to hospitalization. The first experiment was made in Hagonoy, Bulacan, until then a very backward and recalcitrant town; preliminary opposition was overcome by forcible hospitalization, at the same time public addresses were made by the Assistant Director of Health, the provincial governor, the various health officers, and others; fortunately the first cases made good recoveries, and suddenly a voluntary influx of cases began, with the result that the epidemic was promptly controlled, with an average mortality of about 45 per cent as compared to 75 per cent or 80 per cent in previous outbreaks.

The remote results were beyond all expectations; emergency hospitals sprang up wherever cholera appeared, with excellent results; the people were convinced and voluntarily reported themselves or their sick all over the Islands. It is known that in Manila alone, well over 50 per cent of the cases either presented themselves on foot, in street conveyances, and on street cars, or else notified the health stations or the hospital itself so that ambulances could be sent.

Had such coöperation not been had, it is almost a certainty that, taking into consideration the character of the outbreak, as previously explained, it would have assumed much more serious proportions.

Hagonoy itself has experienced a sanitary renaissance; a sanitary commission has given the town a thorough investigation, sanitary ordinances for sewage and waste disposal have been enacted, and the town is now going into the question of prevention of infant mortality and a complete sanitary and economic renovation.

SANITARY COMMISSIONS.

The two sanitary commissions, all that the Service has been able to support, have, since June, 1915, when the first one was formed, practically completed a detailed study of ten towns of the Islands. Their labors have been productive of excellent results, in that, confirmation has been had of many things formerly suspected but not definitely known, and new and unsuspected facts have been learned which are continuously operative to keep up the mortality rate, especially as regards infant mortality. As a direct result of their efforts, the people have learned that many afflictions, which have heretofore been accepted as inevitable, are preventable and curable. Sanitary ordinances, even in towns that the commissions have not visited as yet, have been enacted and are being enforced, especially as regards sewage and waste disposal, and it is known that over 6,000 "Antipolo systems" of sewage disposal have been installed; this means that over 30,000 people are now using sanitary systems of sewage disposal, that formerly had none.

In Pasig alone it is known that over 100 babies less died last year than formerly. Mothers are taking more interest in the care and welfare of their children, and are also doing what they can to furnish a better balanced diet for the entire family.

As a further by-product of the efforts of the Commissions, 57 women's clubs are known to have been formed, dedicated to the prevention of infant mortality, to better housing for the people, and to the inculcation of better balanced diets. With this end in view almost 15,000 families agreed to maintain vegetable gardens, with a view to adding protein producing vegetables to the almost universal diet, among the poorer classes, of rice and fish, thus bringing about a better physiological balance than now exists.

It is a well-known fact that the average Filipino has no reserve of vitality, or as the engineers put it, no factor of safety. If he is overloaded in any way, as by exposure, a slight infection, or fever, he breaks under the load, becomes sick and has to go to bed.

If a reserve of vitality or factor of safety can be created, the results will be far reaching, in that morbidity and mortality, both adult and infant, will be reduced, mothers can give their children more and better breast milk, beriberi will disappear, and a much stronger, healthier, more ambitious and more numerous race will result.

In view of the results that can and are to be obtained by these procedures, for a small and absolutely insignificant outlay compared to the benefits to be derived, it is not understood why more money is not appropriated, and why so much difficulty was encountered in obtaining a small appropriation for 1916, ₱35,000, for 1917, ₱30,000, with the intimation that there would probably be none forthcoming for the fiscal year 1918. Thanks are due to His Excellency the Governor-General for his positive insistence upon the inclusion of an appropriation in the 1917 appropriation of a sum at least approximately equal to that for 1916.

SANITARY HOUSES.

The researches of the sanitary commissions indicated early in their existence, the necessity for a better house than the average Filipino now possesses. The average house now in use is made of nipa and bamboo, affords inadequate shelter from the elements, is too small for an average family, is a continual expense on account of its frail nature, and is continually in danger of destruction by fire, due to its tinderlike make up. Almost two years were given to a study of this problem; the first attempt was a failure, due to our ignorance of the properties of bamboo, of which the first house was constructed; the next attempt however was a success, and it is now possible to build a house, that is sufficiently large for the average family, that is neat in appearance, durable, fireproof, sanitary in all respects, cool and comfortable, for an average cost of ₱500 to ₱600 ($250 to $300 U. S. currency) of materials locally available, by a method of construction so simple that any average carpenter can build it, after having watched the construction of one of them for a short period of time.

A bulletin giving plans, specifications, methods of construction, etc., is now in preparation and will shortly be available for general distribution. It is felt that the people are interested and that it will be a reasonably short time only till the type will become general. The system of construction readily adapts itself not only to dwelling houses, but to other types of construction as well, such as schoolhouses, churches, storehouses, etc.

INSANE.

Our statistics show that there are 4,466 insane in the Islands, of these hardly 1,000 are under proper restraint and care; the great majority are cases of the maniac-depressive type of insanity, probably due, as many authorities now believe, to chronic intoxications resulting from chronic infections, as fevers, malaria, etc., and to prolonged and repeated food poisonings, due to improper and poorly balanced diets. As confirmatory of this hypothesis it may be stated that about 60 per cent of those of this type admitted to San Lazaro Hospital are discharged recovered, the treatment consisting of properly balanced food, baths, purgation, and removal of intestinal parasites. A prolonged study is now being made of these cases; the results so far obtained are promising and it is hoped that something definite can be worked out; meanwhile additional buildings should be provided for proper housing and treatment of these unfortunates.

CULION.

The leper colony at Culion has had many improvements during the past year, and is now in a fairly satisfactory condition, though more improvement especially as to housing of the inmates is needed. The average leper population has been between 4,100 and 4,300.

It is encouraging to note that the lepers are taking much more interest in life, and are showing much more activity; for example, an ice plant has been constructed with leper capital, all the fish used are caught by the lepers, and almost all the vegetables used are raised by them; they are paid current prices for their products; in this way profit accrues to them and economy to the government, as transportation and handling charges are eliminated, and there is but little loss or depreciation of products, quite a considerable item in a year. Practically the only articles sent to the colony now are clothing and rice; groceries, etc., are sent to the Culion store and sold to the lepers at cost, plus a small percentage to cover freight, loss, depreciation, and handling.

Artesian wells to supplement the water supply have been drilled. A sanitary barrio has been laid out to relieve congestion in the populated area, and additional hospital facilities have been supplied.

SMALLPOX.

While there have been but few cases of actual smallpox during the year, the number of cases of varioloid, practically without deaths, has increased; this is interpreted to mean that the immunity obtained by the general vaccination began in 1905 and 1906 has begun to wane. Revaccination will be started at once, and it is hoped to reëstablish immunity before that formerly gained is entirely lost.

FILLING OF LOWLANDS.

Satisfactory progress has been made in the filling of lowlands and tidal areas in the city of Manila, and with the interest now being manifested, it is believed that even more progress will be made during the coming year.

MINDANAO AND SULU.

It will be noted that an additional division has been created in the Bureau by the inclusion of Health Activities in the Department of Mindanao and Sulu.

The chief of the division, Dr. Jacobo Fajardo, former chief health officer for the Department of Mindanao and Sulu, maintains his headquarters at Zamboanga, in order to facilitate the work of his division.

In the preceding, the undersigned has mentioned only those things that were of major importance or were of particular interest as showing progress or development.

Attention is invited to the reports of the various chiefs of divisions which follow, in which more detailed explanations are given and in which also matters of interest are described which have not been touched upon above.

J. D. LONG,
Director of Health.

The Honorable
the SECRETARY OF PUBLIC INSTRUCTION,
Manila, P. I.

REPORT OF THE DIVISIONS OF GENERAL INSPECTION AND HOSPITALS.

[Assistant Director of Health VICENTE DE JESUS, in charge.]

COUNCIL OF HYGIENE.

Following is the report submitted and read by the President of the Council of Hygiene in the regular session of January 11, 1917, showing the work done by that body during the year:

The undersigned has the honor to respectfully submit to the Council of Hygiene the following report of the resolutions adopted by said body during the year 1916.

During said period the Council of Hygiene has held twenty-two (22) sessions, nine (9) regular and thirteen (13) extraordinary, having adopted the following resolutions:

(*a*) Requesting the Director of Health to furnish copies of the examination regulations to each candidate and to the press for publicity, and that the notification of the examination be made six (6) months in advance, in accordance with section 27 of Act No. 2468.

(*b*) Report of the Council regarding the best way of extending the "League for the Protection of Infants" and its "Gota de Leche" to the provinces of the Islands.

(*c*) Recommending to the Director of Health, as a work connected with Act No. 2633, the amplification of the statistics on infant mortality in the Philippines with the following data: (1) Mortality among infants under 24 hours of age; (2) mortality among children under 36 hours of age; (3) mortality among children under 48 hours of age; (4) mortality among children under fourteen days of age; (5) number of deaths among children under one year in proportion to the number of births during the same period.

(*d*) To visit and inspect, as a body, the cement factory established in Binangonan, Rizal; which was done by all the members of the Council.

(*e*) To recommend a project of a law for the medical inspection of schools.

(*f*) To propose that the graduate doctors of public health be admitted to the Philippine Health Service as senior surgeons without civil-service examination.

(*g*) The preparation of question papers for the examination for appointment, promotion to senior surgeon, and promotion to medical inspector, which should take place on June 23 and 24, 1916.

(*h*) Final report of the committee on school hygiene unanimously approved by the Council of Hygiene.

(*i*) Recommending that the publication of the pamphlet presented by Dr. Ruis, with the changes made by the Council, will be of public utility.

(*j*) A resolution in the sense that the committee appointed to study the law on the practice of pharmacy and sale of drugs submit a project of a law in one of the next sessions for discussion and approval, and once approved, that it be submitted to public discussion, after copies of the same have been distributed to all parties concerned.

(*k*) That the committee appointed to study the sanitary ordinances regulating industrial hygiene should draft a general law comprising the hygiene of minors, women, and pregnant women.

(*l*) The appointment by the Council of a committee to study the question of the practice of first-class midwives graduated in the University of the Philippines.

(*ll*) Discussion and approval of the question papers of examination for appointment, promotion to senior surgeon and medical inspector, submitted by the committee. They were approved with slight changes and amendments.

(*m*) Returning to the Director of Health the letter of Mr. Coronel, cirujano ministrante, calling his attention to section 1717, subsections (*a*) and (*c*), and to section 1719 of the Administrative Code, where cirujano ministrantes are not found included among the professionals authorized to prescribe and sell opium.

(*n*) It was resolved that the daily papers of the city should concede a small space in a conspicuous place to insert sanitary maxims, in a brief and sententious manner, regarding what should be done to prevent the cholera infection and its spread. It was also resolved that Dr. S. V. del Rosario should facilitate to the press such memorandum regarding the measures and steps taken, that he may consider proper for publication, for the knowledge of the public. Also that the maxims and sentences written by the members of the Council of Hygiene be given to Dr. Rosario for daily distribution to newspapermen.

(*o*) In the matter of Dr. Mercado, to impose upon him as a punishment, the reduction of two months accrued leave, with option of reinstatement in the Philippine Health Service.

(*p*) Regarding the Pharmacy Act, it was resolved to create an inspection of drug stores under a simple and economical plan under the supervision of the Philippine Health Service, the district health officers being *ex officio* inspectors with authority to delegate their powers to the presidents of health divisions, and that the Council of Hygiene, through its committee, prepare an explanatory memorandum, explaining all the deficiencies and faults that are found in the drug stores of the Philippines, including the basis for the regulation of the practice of pharmacy, which should be sent to the Secretary of Public Instruction through the Director of Health.

(*q*) To suggest to the Director of Health the advisability of making an investigation whether the cause of the recrudescence of cholera observed during December last was paracholera or ptomaine intoxication.

(*r*) To concur with the Director of Health in the appointment of various district municipal physicians in towns of the Islands.

Before concluding this report, the undersigned has the honor to report to the Council of Hygiene that of the amount of ₱2,880 appropriated for per diems to which some members of the Council are entitled, only ₱1,780 were expended, there remaining, therefore, a superavit of ₱1,100.

SEPARATIONS FROM THE SERVICE.

The following health officers were separated from the Philippine Health Service during the year, either by sickness, resignation or death:

Dr. Vicente Frias, appointed June 1, 1914, and resigned September 27, 1916, on account of illness.

Dr. Domingo Valera, appointed October 3, 1914, and resigned September 1916, on account of illness.

Dr. Eliodoro Mercado, appointed October 1, 1898, and separated for the good of the Service December 7, 1916.

Dr. Gilman Dolley, appointed December 4, 1915, died October 21, 1916.

Dr. José Tiongson y Rustia, appointed March 26, 1915, and resigned December 15, 1916.

FOOD AND DRUG INSPECTION.

The Board of Food and Drug Inspection held semimonthly meetings, to pass upon questions arising in connection with the enforcement of the Food and Drugs Act, and Act No. 2342 with reference to patent and proprietary medicines and advertisements thereof, and to receive protests against any action taken in the administration of these laws.

Of importation of foods of which samples were submitted to the Bureau of Science, 59 were admitted as they arrived, 55 were admitted on amendment of label, and 13 were rejected. Also 5 importations of food colors which had already been released when the samples were submitted were found to be nonpermitted colors. Their use in food products was forbidden. Failure to state quantity or net weight or overstatement thereof was the most common defect for which shipments were held for relabeling. Five importations of colors found not to be permitted food colors but not labeled to indicate whether they were intended for food or for other purposes, were required to be labeled "This color should not be used for food purposes" or with a statement of similar import.

Numerous shipments of medicines arrived without the formula expressed as required by law, which had to be affixed at the Customhouse, and a few shipments were required to be relabeled in other respects. One importation was condemned on account of having been contaminated with sea water en route.

Thirty-nine newspaper advertisements of patent medicines were submitted, of which 14 were approved and 25 rejected or required to be amended. Sixteen pamphlets advertising patent medicines were approved and 4 were found to be in violation of Act No. 2342.

Thirty-six proposed trade-marks for food or drug products were submitted, of which 26 were found to meet the requirements of the law, while 10 did not.

The following administrative decisions were issued:

No. 159.—Certification of mixtures containing coal-tar colors.
No. 160.—Gluten products and "diabetic" food.
No. 161.—Maple products.
No. 162.—Egg noodles and plain noodles.
No. 163.—Amending Regulation 28, which relates to marking the quantity of food in package form.
No. 164.—Colors in food.
No. 165.—Cacao products.
No. 166.—Rocky Ford melons.

Also Circular 0-91 with reference to the use of colors in foods.

A survey was made of hair tonics and dyes, toilet preparations, cosmetics, etc., both imported and domestic. Nearly all were found to be free from injurious substances, though samples were found containing bichloride of mercury, salicylic acid and salts of lead.

Questions arose in connection with the statement of net weight or quantity on packages of foodstuffs, including beverages bottled in "splits" of varying sizes.

The matter of watered vinegar and of the labeling of dilute acetic acid sold as a substitute for vinegar, and of distilled vinegar was considered.

Other matters taken up were the requirement as to English label; the prohibition of a name compounded with the word "toxin" for a preparation which is neither a toxin nor an antitoxin; proper labeling as to name of manufacturer and of dealer; labeling of carbonated mineral waters; flavoring extracts, below standard, imitation, or artificially colored; beverages put up in the bottles of other manufacturers; use of the guaranty legend; labeling of chocolate and of mixtures of chocolate with other substances; labeling of domestic liquors; labeling of sweetened condensed milk; capsules of quinine and of aspirin not in conformity with the stated quantity; requirement of the statement "Artificially colored" on the labels of artificially colored imitation products; formula not expressed, and exaggerated statements on label or accompaying advertising matter of domestic proprietary medicines.

Also an amendment to section 1 of Act No. 2342, with reference to the requirement that proprietary medicine shall bear a statement of the formula of their preparation, was proposed.

PROVINCIAL CEMETERIES.

The subject of provincial cemeteries will continue to require constant attention for some time to come. To this date their superintendents, or at least a majority of them, do not take the necessary interest in or pay sufficient attention to the matter, some alleging lack of funds as a reason, and others either neglect, oversight, or ignorance.

During the period covered by this report 35 cemeteries had to be closed and 124 cemeteries were ordered to be cleaned, fenced, etc., being granted a period of from three to four months, after which, if still in insanitary condition, they were to be closed.

The results of the work carried on during the year are shown in the following table:

New cemeteries approved	65
Old cemeteries approved	8
Old cemeteries reopened	15
Old cemeteries closed	35
Extensions of time granted	124
Enlargements approved	13
Proposed new cemeteries disapproved	4
Number of cemeteries reported as being insanitary	124
Number of cemeteries reported as being in good condition	44
Number of cemeteries reported as having complied with the cemetery rules and regulations at the request of this office	56

The wholesome project, which is backed up by this Service, of closing all the small and insanitary cemeteries around the city of Manila, to consolidate them into the Del Norte cemetery with the adjacent La Loma and Chinese cemeteries, and another to the south of the city, as proposed by Roman Catholics, has failed due to some difficulties had with the Roman Catholic Church authorities. There is no doubt, however, that this plan will be realized with the aid of the city of Manila and the good will of the Roman Catholic Church.

BOARDS OF EXAMINERS.

Section 3 of Act No. 2666 of the Philippine Legislature provides that the boards of medical, pharmaceutical and dental examiners, will, after the passage of that Act, be under the control of the Secretary of the Interior, and reports of their transaction will hereafter be discontinued.

BOARD OF MEDICAL EXAMINERS.

The Board is composed of—

Almon P. Goff, M. D., president.
Miguel A. Velarde, M. D., member.
Eleanor J. Pond, M. D., secretary-treasurer.

The Board held two regular quarterly written examinations during the year, with the following results:

Ten doctors of medicine, holding diplomas from the United States or Japan were examined; nine were registered.

Six doctors were registered without examination, under Act No. 1632.

Forty-eight licentiates in medicine were examined; five failed to meet requirements, forty-three were registered.

Twenty-eight cirujanos ministrantes were examined; ten failed in requirements, eighteen were registered after examination; one registered without examination, under section 5 of Act No. 310.

Twenty-five midwives were examined and registered. These were all acquired through the School of Midwifery and the nurses' training schools and therefore stand for better service to the people than the old-fashioned, untrained woman.

Increase of registrations:

Doctors	15
Licentiates	43
Cirujanos ministrantes	19
Midwives	25
Total	102

Financial report:

RECEIPTS.

From doctors	₱800.00
From licentiates	2,300.00
From cirujanos ministrantes	190.00
From midwives	250.00
Total	3,540.00

All of which was duly deposited with the Insular Treasurer.

BOARD OF PHARMACEUTICAL EXAMINERS.

MEMBERS OF THE BOARD.

D. Rafael Carreon, president.
D. Servando de los Angeles, member.
D. Juan A. Caballero, secretary-treasurer.

The Board held two examinations, one on January 4, 5, and 6, 1916, at which 51 candidates presented themselves, and the other on July 5, 6, and 7, for which 56 applications were filed, or a total of 107 applications for examination during the year

1916. Of this number 59 attained the required average and received certificates.

During the same year the Board granted in accordance with Act No. 2382; 2 certificates to Chinese druggists, 2 provisional certificates, and 66 apprentice certificates.

A total of ₱2,332 was collected during the year.

BOARD OF DENTAL EXAMINERS.

The officers of the Board during the year were as follows:

A. P. Preston, president.
A. P. Preston, secretary-treasurer, acting, from January 1 to March 31; Thomas P. Merchant, from April 1 to December 31.
G. R. Mateo, member.

The terms of the various member will expire as follows:

A. P. Preston, December 31, 1918.
G. R. Mateo, December 31, 1917.
——— ———, vacancy, new appointee's term will expire December 31, 1919.

EXAMINATIONS.

Two examinations were held during the year, as provided by law, in June and December. In June, 1 graduate and 38 undergraduates presented themselves before the Board. In December, 2 graduates and 28 undergraduates were examined. Of the total of 3 graduates and 66 undergraduates examined, 3 graduates and 11 undergraduates were passed and given certificates of registration. The graduates were up for the first time. Only a few of the undergraduates appeared for the first time. Of the 28 undergraduates who presented themselves at the December examination, 22 had been examined in June, so that but 44 undergraduates were examined in the two examinations, of whom 9 had presented themselves and failed in previous years.

One temporary certificate was issued to Doctor Lisbona, who later appeared before the Board, as required by law, and passed.

The exchange of old certificates for new ones, on the part of those undergraduates who have been in practice for three years or more, continues to take place, and during 1916 thirteen such certificates were turned in and new ones issued to take their places.

The routine correspondence and business of the Board was attended to, and matters requiring action have all been disposed of.

FINANCIAL.

The total income of the Board amounted to ₱1,866, a larger sum than in any preceding year, as shown by the following brief recapitulation:

INCOME.

1903 to 1914 inclusive	₱2,390
1915	1,612
1916	1,866
Total	5,868

All of which has been paid into the Insular Treasury.

HOSPITAL DIVISION.

The interest recently awakened throughout the Islands in the establishment of hospitals shows the progress that has been attained in previous years by those in actual operation. Almost every province desires to have a hospital of its own; Batangas, Bohol, Romblon, the municipalities of San Pablo, Laguna; Iba, Zambales, and others have appropriated amounts for the construction of a hospital; a maternity hospital has already been established in the province of Bulacan.

The enthusiasm for hospitals has been noticed even in the Legislature as shown in the bills introduced for the creation of one in each province, and the number of applications which have been received at this office for information regarding the subject. The Philippine Health Service has seen with satisfaction such enthusiasm for hospitals, and as an aid, it has now in print a Bulletin on Hospitals, whose "Foreword" explains its points of view in the matter and the contents of the pamphlet, as follows:

> So many inquiries have been received at the headquarters of the Philippine Health Service for advice and assistance in the establishment organization and management of provincial and municipal hospitals, that it has been deemed wise to prepare and publish this bulletin.
>
> From practical experience derived from the presence, in various provinces and towns of the Islands, of the Sanitary Commissions, and also through the efforts of the District Health officers, a real desire has made itself manifest among officials and residents of provincial towns for the improvement of health and of sanitary conditions, this has first manifested itself in a practical form, in attempts to secure hospitals and hospital relief.
>
> While the first and principal duty of a health service is to prevent the appearance and spread of disease, rather than attempt its cure after having appeared, it is recognized that, until the public is educated to the point that disease can be prevented or eradicated in its incipiency, all reasonable means must be used to cure those who are suffering, for two reasons: First. To save the life of the individual, if possible, and second, to instruct the individual and his family so far as may be possible, during

illness or convalescence, in preventive measures, for his own and his family's future protection.

For the accomplishment of the above purposes the hospital provides the most practicable means now available; in addition the hospital or dispensary will be the center from which sanitary education and instruction will radiate in all directions.

To further, therefore, the cause of sanitation it is the desire of the Philippine Health Service to assist in bringing about the establishment in each provincial capital of a provincial hospital with connecting subsidiary dispensaries in each municipality and barrio. If this bulletin will furnish the necessary preliminary information which will assist in eventually accomplishing this end, its publication will be amply justified.

The ultimate success of the hospital and dispensary system, and the assurance that the greatest good will be accomplished for the greatest number, will depend upon the previous or coincident establishment of a provincial and municipal health organization, which will act not only to prevent the occurrence of disease in large numbers of instances but will also insure the arrival of patients at the hospital or dispensary sufficiently early in the illness to assure the best results.

In the first part is given, (*a*) the organization and personnel of a hospital, for 6, 12, 20, or 50 beds, as the case may be, so arranged that the necessary service may be provided in each case; (*b*) the classification of pay and free patients in accordance with the laws in force; (*c*) a schedule of fees for admission of pay patients into the hospital, and lastly, (*d*) rules governing the technical employees, patients, and help of the hospital.

The second part includes the equipment, or a list of articles comprising: (1) hospital furniture and accessories; (2) indispensable surgical instruments; (3) laboratory apparatus and accesories, all calculated for each size of hospital according to the number of beds, with the approximate price of each article, though the current market prices may be expected to fluctuate; (4) a list of drugs and articles necessary for a small pharmacy adequate for the needs of each hospital.

In the third part, plans for four classes of construction of hospital are presented; from reënforced concrete, to nipa and bamboo; all being similar in arrangement so that a uniform appearance of all hospitals may be maintained and at the same time all the requirements of such an institution may be met. The approximate cost of each different type has been roughly calculated, to serve as a basis in making an estimate for the kind of hospital desired.

In conclusion, a table is given showing the estimated expenses to be incurred for the operation of each size of hospital per year, for the information of those concerned in the establishment and maintenance of such an institution.

PHILIPPINE GENERAL HOSPITAL.

Built upon the pavilion plan, this magnificent hospital was, in years past, under the control of the Philippine Health Service, but, by the passage of Act No. 2431 in December, 1914, it was provided with a separate appropriation and on February 3, 1916, by the operation of Act No. 2563, it became an independent institution and is now operated, with Filipino personnel in its ad-

ministrative and technical departments, under the Secretary of the Interior.

BILIBID HOSPITAL DIVISION.

Salaried personnel of Bilibid Hospital.

Chief, division of sanitation	Philippine Health Service.
1 resident physician	Philippine Health Service.
1 chief nurse	Bureau of Prisons.
1 Pharmacist	Bureau of Prisons.
1 surgical nurse	Bureau of Prisons.
1 sanitary inspector	Bureau of Prisons.
3 practicantes	Bureau of Prisons.
Prisoner assistants	Bureau of Prisons.

Each of the main departments of the prison located outside of Manila is provided with a hospital, an officer of the Philippine Health Service being detailed in charge.

MORBIDITY.

The greatest number of admissions to hospital from newly arriving prisoners were due to intestinal parasites, amoebiasis, tuberculosis, contagious skin diseases, and drug habits.

With the exception of cholera infections, the largest number of old prisoners admitted to the hospital were from tuberculosis, respiratory diseases, hemorrhoids, hydrocele, hernia, and rectal fistula.

MORTALITY.

Computed on the average daily number of prisoners in Bilibid and outside stations (as in previous years), the number of deaths in Bilibid, Manila, only, gives a general death rate of 10.29 per thousand per annum, of which 5.14 is for general diseases (including cholera infection) and 5.14 for tuberculosis (see tables).

Computed on the actual number of individuals passing through Bilibid proper, the deaths actually chargeable to that institution give a general death rate of 7.74 per annum per thousand, of which 3.87 represents general diseases including 0.10 cholera, and 3.87 tuberculosis.

Computed on the total actual number of separate and distinct individuals passing through Bilibid, Manila, and all outside stations, all deaths wheresoever occurring, give a general death rate of 8.31 for the entire Bureau of Prisons.

BIRTHS.

Eight children were born to newly admitted women during the year—7 males, 1 female; all illegitimate. It is again recommended, both for the sake of mothers and children, that short-term pregnant women be sent elsewhere than Bilibid Prison for punishment, as it hardly seems just that a prison sentence be inflicted upon a child before it is born and that it be burdened with this stigma throughout life.

INTESTINAL PARASITES.

Sixty-one per cent of all admissions to the hospital were from intestinal parasites, and in addition to this 1,310 cases were treated as complications of other diseases, so that these infections stand high in the morbidity tables of the prison. All prisoners entering Bilibid are quarantined, formerly for 5 days, now for 15 days, during which time stool examinations of all prisoners are made, with the result as shown in the laboratory report in the appendix.

FILARIA.

A total of 4,510 blood examinations were made for filaria; all newly arriving prisoners have their blood examined for diurnal and nocturnal appearing micro-filaria while undergoing quarantine. Of these, 3,815 were new arrivals, showing 121 positive (or 3.17 per cent); out of 428 old prisoners returning from Corregidor to Bilibid 17 were positive (or 4.0 per cent). No known filaria case is transferred from Bilibid Prison to any outside station. The above 17 had negative blood findings at the date of their admission to prison. All of these 17 men had been in Corregidor for more than four months. Male filaria cases were segregated in a dormitory by themselves and required to sleep under mosquito nets. This is the only precaution which it has been found practicable to take. Along with this precaution, however, goes the destruction of mosquitoes about the prison in general. Female filaria cases are from necessity confined in the women's dormitory with other female prisoners; this owing to lack of room so that no other disposition can be made of them.

No filarial cases encountered during the past year have shown any pathological effects from filarial infection, except one man who suffered from hydrocele which upon operation was found to contain the filarial organism in the fluid. He apparently suffered no more inconvenience than those suffering from hydrocele due to other causes.

One hundred and sixty-eight cases remained in Bilibid December 31, 1916.

VENEREAL DISEASES.

Gonorrhea.—From 1,705 examinations of urine, 73 were found positive for gonorrhea. A total of 74 cases of urethritis and

1 case of gonococcic infection of the eyes were treated. All cases of gonorrhea or those who show gonococcic infection are segregated in a division of the contagious department and held there until free of their infection.

Syphilis.—Nineteen cases were treated in the hospital and an unrecorded number in the outpatient department during the year. Among those treated in the hospital 1 showed locomotor ataxia, 1 aneurism of the ascending aorta. This man has been under treatment for the past two years and shows a very decided improvement in his condition; in fact, he at present does the ordinary work about the prison, no longer being a hospital patient. Formerly he suffered severely from dyspnea and palpitation of the heart; now he rarely complains of these symptoms.

One case of aneurism of the femoral artery with syphilis of the aorta and cardiac dilitation died following operation on the aneurism, his death occurring about ten or twelve hours after operation.

Wasserman examination of newly arriving male prisoners was begun early in 1916 with a view to determining the probable incidence of syphilitic infection throughout the Philippines as represented by the element sent to Bilibid, and the following is the resut:

New arrivals	4,265
Examined	1,245
Positive	399
Percentage positive	32

BUBONIC PLAGUE.

No cases were recorded for the year. All buildings throughout the prison, with the exception of the buildings occupied as quarters by the Director, the Assistant Director, and the first and second class guards, are rat-proof buildings, so that there is no place for rats to breed. Rats enter the prison at night through the open surface drains and run about the grounds picking up such remnants of food as they can find. Though traps are regularly set and quite a number are caught, it has so far been impossible to eliminate the menace from these invasions. All rats sent to the Bureau of Science for examination for plague have been reported negative.

CONTAGIOUS EYE DISEASES.

One case of gonococcic infection of the eyes and 42 cases of acute conjunctivitis occurred during the year. There has been a noticeable decrease in the acute eye infections since the prison grounds have been repaired so as to eliminate the dust.

CONTAGIOUS SKIN DISEASES.

Ninety-two cases of contagious skin affections were treated during the year. Of these, 70 cases were tinia imbricata. All cases of tinia imbricata were immediately segregated in a ward in the contagious hospital for treatment and kept there until free of their infection, which usually requires several months, as the infection is in the deeper layers of the skin, difficult to reach, and very resistant to any form of treatment.

RESPIRATORY DISEASES.

This condition constitutes one of the gravest arising among the prisoners. During the past year we had 8 cases of acute bronchitis, 3 of serofibrinous pleurisy (tuberculosis), 1 of gangrene of the lung, 1 of empyema and gangrene, 34 cases (with 3 deaths) of lobar pneumonia, and 51 new admissions of symptomatic asthma. As in the eye cases, there is also a very noticeable lessening in the number of respiratory diseases since about one-quarter of the prison yards was planted in grass and the remaining three-quarters repaired and oiled, thus eliminating much of the dust about the prison.

DRUG HABITS.

Two hundred and eighty-two cases of morphinism and 123 cases of opiumism were treated during the year.

BERIBERI.

Two cases were reported for 1916, both of which developed outside of the prison and were convalescent when received. One of them developed among the prisoners at Corregidor.

MENINGITIS (WEICHSELBAUM).

In March, 1916, we discovered 2 cases of cerebrospinal meningitis. In the spinal fluid of each of these prisoners the specific organism of Weichselbaum was discovered. Both were transferred to San Lazaro, where they died a few days later, the autopsy in each case corroborating the bacteriological findings. Both of these men came from dormitory No. 3, Carcel. Precautions were immediately instituted, with the result that no more cases occurred. The origin of the infection is unknown.

TUBERCULOSIS.

Of the 62 deaths occurring in Bilibid Prison proper during the year 1916, 33 were due to this cause, thus proving the right of tuberculosis to the highest rank in our mortality tables as in the past years. While the rate for 1916 (3.87) is lower than for previous years, it is still too high, and it is thought that an unnecessary number die from this cause. In this connection, we desire to call attention to the vastly improved condition of the prisoners suffering from tuberculosis who are at the Iwahig Colony over those held in Bilibid.

Many tuberculous prisoners are held at Bilibid Prison Hospital for the reason that they are not eligible for transfer owing to the present regulations governing the Iwahig Penal Colony. Those in Iwahig can be put to some remunerative work by which the Government can derive some pecuniary benefit from their labor. Those in Bilibid are dead stock on our hands. They must from necessity be held in the hospital. They do not work and as a result of their enforced idleness are a constant source of trouble to the hospital and to the prison authorities.

Attention is also called to the lack of suitable room for caring for tuberculous women. At present we have no means whatever for separating the tuberculous from the nontuberculous female prisoners. If they are too sick to work, they are sent to the female ward of the hospital, where they are among the female prisoners who are not necessarily tuberculous. If they are able to work, they are in the female dormitory with the other female prisoners. They are at all times a constant menace to all other women in the institution. Some provision should be made for the proper segregation of these cases.

CONTAGIOUS DISEASES.

With the exception of cholera carriers, considered on another page, 12 cases of contagious diseases were treated during the year. Of these, 9 were due to mumps, 1 varioloid, and 2 meningitis (Weichselbaum). This is very gratifying reduction of the contagious cases from previous years and is, we believe, the lowest in the history of the institution.

QUARANTINE.

All newly arriving prisoners receive a disinfecting bath, are given clean prison clothing, and sent to quarantine, where they formerly remained for 5 days. Owing to the cholera infection, the quarantine period has been extended to 15 days. During the year an average of 13 prisoners has been admitted to quarantine daily. While in quarantine every prisoner is vaccinated, receives an antiseptic bath daily, and has his urine, blood, and stool examined. All prisoners found positive on laboratory examination or needing medical or surgical attention, if negative for cholera or other contagious infections, are transferred to the hospital for treatment. Contagious cases are transferred to the contagious department.

MESS KITS.

At present there is no available means for properly disinfecting the mess pans used by the prisoners. It is no uncommon occurrence to find prisoners scouring their mess pans with the sand from the prison yards. The objection is obvious when we remember the large percentage of persons in Bilibid suffering from tuberculosis. An attempt has been made to partly remedy this by dipping the mess pans in an antiseptic solution immediately before the food is put into them at mealtime, but it is equally obvious that this method of disinfection is entirely inadequate and it should be remedied at once.

THE CHOLERA INFECTION OF 1914–15.

The cholera appeared within three or four days after the inundation in September, 1914, and during the next two months 52 cases and 6 deaths from the disease were reported in Bilibid Prison. At the same time routine stool cultures were taken throughout the prison, something like 32,000 cultures in all being taken, out of which 128 were reported back as positive cholera carriers. Out of these 128 carriers, 6, or 5 per cent, developed well-defined symptoms of cholera at intervals ranging from 1 to 18 days after the infection was found in their stools.

In following up the cultures of cholera carriers it has been found that the carriers will give one or two positives and then a series of negatives to cultures taken every four days. In some cases anywhere from 20 to 35 successive negative stool cultures were obtained at two-day intervals, the stool later becoming positive; idicating that the carrier is either a carrier intermittently or that the organism undergoes some changes in which we cannot at the present time recognize it as a cholera spirillum. Later on, in the 1916 infection, we will demonstrate how these cases show up in the agglutination test. The question naturally arises: If these carriers harbor the germs of cholera for such variable lengths of time showing positive in cultures only at periods, when may we consider such an individual no longer a positive or a danger to the public and to himself? In other words, when is a carrier free from the infection, and how are we going to determine that he is free?

THE CHOLERA INFECTION OF 1916.

The total number of carriers for 1916 was 600, or 8.2 per cent of the total number of prisoners. This includes the number in prison and the new arrivals passing through quarantine. A total of 112,577 stool cultures have been taken in order to isolate the infected individuals.

Out of these 600 infected prisoners, 488, or 81 per cent had some intestinal parasite; 48 per cent had hookworm, 14 per cent amoeba, mostly histolitica; and 19 per cent ascaris; 1 case only had tinea saginata.

Out of these 600 prisoners, 599 showed no symptoms of the disease, except for the fact that their stools were positive for agglutinating cholera vibrio.

Prisoner 10556 had been in prison since October, 1914, at which time he was found to be a cholera carrier. This man later had six negatives in 1914. In 1916 he was admitted to the hospital suffering from amoebiasis, his stool being positive for amoeba in April, May, June, and July. In September it was found to be negative, and was negative for cholera vibrio on July 11 and August 25. On September 6, 1916, this men died. The pathological report returned by Doctor Crowell showed that the cholera vibrio had been found in the jejunum.

On September 18 the quarantine period was increased to 10 days and two treatments of ox gall 0.65 t. i. d. for two days with repetition after an interval of five days.

Results.—From 185 cases prior to the use of ox gall, 15 or 8 per cent became repeaters within 2 months. The first ox-gall period produced the following result:

Of 155 treated September 8, 9, 14 and 15, 5 were reported positive September 9, and 6 September 17; 84 of these 155 were discharged to brigades September 20, of whom 10 were returned positive on September 22; thus producing a total of 21 positives or 13.5 per cent of the 155 treated.

Of 529 prisoners receiving ox-gall treatment in the cholera brigade, 120, or 23 per cent, became repeaters. Of this number, 68, or 13 per cent, were returned as repeaters from the cholera brigade as follows:

Following first ox-gall treatment, 21 or 31 per cent.
Following second ox-gall treatment, 42 or 62 per cent.
Following third ox-gall treatment, 5 or 7 per cent.

Thus showing the average returned as repeaters, while yet in the cholera brigade, to be within ten days after first ox-gall treatment.

Of the 52 who had received ox-gall treatment and were returned to their brigades as negative to be returned therefrom as repeaters at a subsequent date, 35 were so returned within 10 days after being discharged from the cholera brigade.

Of the total 135 repeaters, 80, or 60 per cent, were returned from the cholera brigade and 55, or 40 per cent, were returned from brigades.

Beginning the 24 of November, 3 squads were set aside for special observation.

Squad one, consisting of 10 Filipinos, all repeaters, to receive urotropine 0.65 grams t. i. d. and Filipino hospital diet; cultures to be taken thrice weekly and examined by Doctor Johnston for nonagglutinable, partial agglutinable and agglutinable vibrio.

Second squad, to consist of 10 Filipinos, all repeaters, to receive urotropine 10 grams t. i. d. and full American hospital diet; cultures as provided for squads 1 and 2.

Squad No. 3, to consist of 5 Americans, all of whom are repeaters, to receive urotropine 10 grams t. i. d. and full American hospital diet; cultures as provided for squads 1 and 2.

Results.

Group.	Average.				
	Positive.	Negative.	N. A.[a]	P. A.[b]	Total to a next positive.
	Days.	*Days.*	*Days.*	*Days.*	*Days.*
First	5	9	17	22	53
Second	5	7	12	18	42
Third	5	7	12	19	43

[a] Nonagglutinable. [b] Partial agglutinable.

All have completed this cycle with every indication of repeating it, investigation still being called for.

RECOMMENDATIONS.

The following recommendations are submitted:

General kitchen.—Relay floor and cut drain beneath steam kettles in order to provide for better drainage.

Walls should be painted white.

Roof drain pipe on the inside wall should be removed.

Another skylight should be provided.

Remove wall between windows in north end of room; extend the entire space from roof to floor, and install iron grating.

Laundry.—Remove walls forming well in the north end of the room to provide better circulation of air.

Silver shop.—This room is entirely inadequate for the number of men employed therein. It is recommended that at least double the space be provided.

Building No. 2 Presidio.—This building is unfit for use and a menace to the prisoners. It should be removed at the earliest possible date.

Building No. 3.—This building should be repaired, the walls smooth-finished so as to prevent hiding places for vermin; and should be whitewashed.

Hospital.—Operating room. Smooth finish walls of operating room and rehang windows so as to admit of better light.

The main stairway leading from the lower to the upper floors should be thoroughly examined, as it is believed that some of it has been badly damaged by white ants and may possibly collapse.

Construct morgue separate from hospital.

Provide additional contagious rooms for the contagious hospital.

Construct an additional stairway leading from the tuberculosis ward on the second floor to the yard outside the hospital.

All tuberculosis patients should, if practicable, be transferred to Iwahig.

Provide suitable hospital quarters for tuberculous women.

Install instantaneous water heater in the hospital.

Install shower baths in each section of the contagious hospital.

Repair the hospital bathroom.

The use of petates throughout the prison is considered inadvisable owing to the difficulty of properly disinfecting same.

The present ration allowance should be increased to make up for the additional cost of supplies.

Drains.—The open drains about the prison yards should be recemented where necessary.

The roof drains, especially on the photograph gallery and Department A, hold sufficient water to breed mosquitoes. They should be rehung so as to drain properly.

A concrete drain should be constructed by the city connecting the Santa Clara barrio drain with the Azcarraga Estero east of the prison grounds.

Grounds.—The space north of the prison wall should be filled in to prevent the accumulation of stagnant water.

Construct a new incinerator of sufficient capacity for the garbage of the prison.

Provide new quarters for first and second class guards.

Replace the wooden cuspidors in use throughout the prison with seamless metal ones.

SAN LAZARO HOSPITAL.

Three thousand six hundred and twenty-four patients were admitted, 2,817 were discharged, 526 died, 406 were transferred or escaped.

The average number subsisted per day was 628, and the average daily cost of subsistence was ₱0.359.

The hospital is divided into departments for insane, for lepers, for dangerous communicable diseases, and the morgue, crematory, and steam laundry, etc.

DEPARTMENT FOR INSANE.

There are at present in the department for insane 362 patients—296 males and 66 females. The following table shows the principal forms of insanity present and the number comprised in each group:

Group.	Form of insanity.	Male.	Female.
1	Melancholia-mania (maniac-depressive)	140	32
2	Dementia praecox, paranoia and paranoid forms	110	28
3	Epileptic insanity	16	1
4	Alcoholic	7	0
5	Senile dementia	3	1
6	Opium habit	2	0
7	Feeble minded	3	2
8	Miscellaneous and unclassified	15	2

About 100 selected cases have undergone special observation and treatment including treatment for intestinal parasites and the administration of soda bicarbonate in considerable doses, with a view to reducing or eliminating any existing acidosis.

This group will be reported on when all are completed, but it may be stated now that a considerable number have improved. The male insane have worked in the garden and around the grounds as usual, and have also made a good many belts and other such articles, besides doing a quantity of work in the wards. The Woman's Club has continued to take an interest in the condition and work of the insane, particularly in the woman's ward. A small moving picture machine has been presented to the hospital by this club.

During the year 259 patients were admitted to this department, and 159 were discharged, nearly all improved or cured; 36 died. Recommendation has been made for a new ward for mild and special cases, and it is hoped that the money will be appropriated by this Legislature, as the building is badly needed.

DEPARTMENT FOR LEPERS.

In the leper department 300 have been admitted and 331 transferred to Culion. The committee for the examination of lepers meets regularly on the second and fourth Fridays of each month, and no person is sent to Culion or held permanently unless found positive clinically and miscroscopically by this committee. All suspects and negatives are isolated from the other patients, and the sexes are strictly separated. All of the guard and police work of this department is done by the lepers themselves, as is the actual work of caring for the sick, etc. None but necessary employees, suspects and negatives are kept permanently at this hospital, the others being sent to Culion whenever a sufficient number has been collected and transportation is available. The new cottages are satisfactory, answering the purpose for which they were built, that of furnishing quarters for certain cases awaiting examination, and for negative and suspect cases.

DEPARTMENT FOR DANGEROUS COMMUNICABLE DISEASES.

In the department for dangerous communicable diseases 1,231 persons, cases and suspects, were admitted to the cholera ward. The cases during the year were most numerous in the months of August, September, October, and December, there being 205, 393, 126, and 201 cases, respectively, during these months. The mortality has varied from 22 to 41 per cent with an average of about 29 per cent. The treatment has been as usual—intravenous injections of approved salt solution, proctoclysis, some stimulation, soda bicarbonate when needed, etc. The important thing to remember in treating cholera is that the enormous amount of fluid lost by purging and vomiting must be replaced, or the patient will nearly always die, when the attack is severe. The cholera in August, September, and October was characterized by marked systemic poisoning, and that occurring in December by more severe purging and vomiting, while there was perhaps less general toxicity. The mortality in cholera is gradually decreasing as the cases come earlier to the hospital, and the treatment improves, as it undoubtedly has during the past ten or fifteen, or even five years. At this writing there is practically no cholera in Manila.

One hundred and eighty-three patients were received in the diphtheria ward; it is thought that these cases are coming in somewhat earlier than formerly. Other cases received were as follows: varioloid, 95; measless, 252; tetanus, 55; mumps, 40; and miscellaneous, 65. One case of glanders recovered, which is unsual.

The new kitchen, with dining room for employees, was completed last spring. This kitchen is complete and in it is done the cooking for the entire institution, as many as 700 or 800 or more people being fed from there at times. It contains a very large range, three large and one smaller steam cookers, and all necessary tables, sinks, etc. The steam for the cookers is furnished by a boiler outside of the kitchen. This is a very fine building constructed of concrete, with tiled roof, white tile floor, very complete lighting and an abundance of screened windows and doors. Since this kitchen has been used the work of feeding the inmates has been carried on in a much more satisfactory manner than before, the character of the food has improved, and in general the installation of the new kitchen and dining room has been of the very greatest benefit to this institution. It is in fact difficult to see how the old kitchen could have been used much longer.

A number of nurses engaged in district work have been furnished quarters and subsistence during a large part of the year, and on several occasions have been found to be very useful in emergencies, as it was possible to detail them for ward work in times of stress when it would have been practically impossible to obtain help from any other source.

STEAM LAUNDRY AND DISINFECTING PLANT.

At the laundry and disinfecting plant several hundred people, with their baggage, have been disinfected preparatory to leaving the Islands for the sugar plantations in Hawaii. On several occasions during the year it has been necessary to run the laundry Sundays and part of the night to keep up with the necessary work.

MORGUE; CREMATORY.

Three hundred and seventy-two autopsies have been held in the morgue, and 28 bodies cremated.

Medical students from the University of the Philippines and the University of Santo Tamás have visited the hospital regularly for clinics in both the insane and contagious departments, during all of the school year, and an effort has been made to see that they really learned something of these diseases.

SOUTHERN ISLANDS HOSPITAL.

GENERAL.

During the year there was a very slight increase in the number of patients admitted to the hospital compared with that of the previous year, although there was an increase of 59 per cent in the total number of outpatients over 1915; 66 per cent in the number of cases and 40 per cent in the number of prescriptions filled. There was also an increase of 62 per cent in the number of operations performed in the outclinic department over the previous year, and 17 per cent increase in hospital operations (262 operations were performed in the hospital, of which 112 were major operations of all descriptions). This considerable increase of outpatients and operations performed was due to the opening of the new dispensary. The average number of visits by outpatients per day was 71 while in the previous year it was 47 only, and it will be noted that this average increased to 133 patients per day during the last quarter of the year.

There is a great reduction observed in diseases such as malaria, dysentery, beriberi and pneumonia, among the patients to the hospital, but there is a considerable increase in fractures and traumatism.

CONTAGIOUS AND INFECTIOUS DISEASES.

The contagious and infectious disease department was of great service during the year. Diphtheria, cholera, varioloid, measles, leprosy were all treated there. Lepers frequently present themselves for treatment and are admitted awaiting transportation to Culion. In all 17 were admitted and treated. One girl of 15 years of age, a very positive leper, was admitted and when discharged after six months' treatment she was negative clinically and microscopically.

DISPENSARY.

The new dispensary building was opened July 19, 1916, and has been a great addition to our resources. As a result of having more room to work in and better facilities in every way for the outpatient work, the average number of patients has more than doubled.

CHANGES IN STAFF.

Dr. John H. Linson of the United States Public Health Service, in charge of the eye, ear, nose, and throat department of this hospital, was transferred from Cebu. Dr. Pio E. Valencia, previously assistant in that department, was appointed to take Doctor Linson's place.

Dr. Gabriel K. Jureidine, in charge of the dental clinic, left the Islands on June 17, 1916, and as nobody was available to take his place, it was necessary to close the clinic.

X-RAY EQUIPMENT.

There has been considerable demand for X-ray work during the year, but owing to the incomplete equipment the hospital was unable to give it.

REPAIRS.

Considerable repairs have been made on the roof, gutters, and downspouts of the main building and in the furniture and equipment of the hospital. Repairs to the contagious diseases building were also made on account of destruction caused by the white ants.

TITLE TO PROPERTY.

Title to the Southern Islands Hospital site was secured and the property is now in the name of the Philippine Health Service.

"GOTA DE LECHE."

Owing to lack of funds, the Philippine Health Service was obliged to cut off the monthly allowance for infant feeding work.

Consequently money was raised among the people of Cebu by benefits, subscriptions, and a garden fete. Thus the work continues. The Superintendent of the Southern Islands Hospital disburses the money, while the actual clinical work is done by the provincial nurses.

RECOMMENDATIONS.

Personnel:
- (*a*) An additional nurse. With the increased hospital activities, the nursing service increases proprotionally.
- (*b*) Additional helper or servant for the dispensary building.
- (*c*) That the title of the intern be changed to resident physician.

Buildings:
- (*a*) Completion of the dispensary building.
- (*b*) Two small buildings with concrete floors for use as contagious disease wards by pay patients.
- (*c*) Roofing front and five other porches with a view to extending the hospital accommodation and giving the nurses and patients in private rooms porches available for use in all weather.
- (*d*) Serving building with storerooms. At present the hospital is very short of storerooms and one of the dining rooms is being used.
- (*e*) Construction of laundry building and drying room.
- (*f*) Construction of morgue.
- (*g*) Permanent kitchen and dining room to replace the present light-material building.
- (*h*) Nurses' dormitory.
- (*i*) Garage for ambulance.

Ambulance:
- (*a*) The need of an ambulance is imperative.

X-ray accessories:
- (*a*) There is great need of a complete X-ray outfit.

CULION LEPER COLONY.

CONSTRUCTION.

Hospital annex.—There has recently been completed the first portion of the proposed additions to the hospital system, namely, the two-story annex, one-half of which runs parallel with the old hospital, containing on the first floor an outpatient surgical dressing-room for men, a similar but small room for women, a storeroom for the attending Sisters, a room for the chaulmoogra clinic and a sterilizing room. The second floor of this portion is to be used as a general ward. At right angles to this portion of the annex and situated on the hillside so that the floor corresponds to the general ward of the annex, is an additional general ward. The bed capacity of these two wards will be 60 each.

Septic tank.—Work which was started on the new septic tank was discontinued in the early part of the year because of lack of funds; it is hoped that this work may be resumed at an early date; the odors arising from the putrifying sewage are becoming more and more objectionable as the cracks in the walls of the tank are enlarging.

Nipa houses for lepers.—Construction of nipa houses in the colony has been discontinued because of lack of space.

Construction in Balala—Sisters' house.—The reënforced concrete house for the Sisters, which was started in 1915, was completed and occupied by the Sisters in June, 1916.

Furniture.—During the year considerable furniture was made for use in Balala and the colony, the most important being the iron beds for the hospital wards.

Artesian wells.—Having failed to obtain sufficient fresh water from the artesian wells drilled in Balala, the machine was moved to the valley of Pilapil, where two shallow wells were drilled; fresh water was obtained, but to be serviceabe it must be pumped to a level of at least 100 feet.

Wharf bodega.—Work was started in August on a much needed storehouse on the dock, whereby steamers could be unloaded during stormy weather without loss of time and by a few men; work was discontinued on this because of lack of funds.

MAINTENANCE.

Due to lack of funds, but few repairs of importance were made in Culion during the last year, only the things of immediate necessity were cared for.

The launch *Culion* was entirely out of commission for about nine months of the year and during the remainder of the time it was in unsatisfactory condition. This was due to two things, lack of skilled machinists, and the necessity of using the engine for heavy duty, when it was designed for light duty. It is proposed to place a heavy-duty engine (the one formerly in the *Culion*) in the sailboat *Shamrock* and to use the *Culion* for police duty only.

During the year, the cement covering of the main septic tank of Balala caved in and it was necessary to replace it with a reënforced concrete cover. The old cover, placed in position a number of years ago, was not reënforced, being a shell of cement on soft wood form lumber.

The house formerly occupied by Mr. Morris has been torn down, being beyond repair and also lying directly in the line of the proposed road leading from the dock to the upper level trail. Mr. Morris now occupies the house formerly occupied by the Sisters.

The lighter, formerly used for hauling sand and gravel for construction, has been beached, having decayed beyond repair. A casco to replace this has been requested and an effort is being made to obtain one.

The telephone system, installed several years ago, communicating with the colony, having been out of commission for more than two years, has been removed.

The small ice machine which furnishes 200 pounds of ice daily, is at present running, having been out of commission for six months.

One laborer has been detailed throughout the year to care for the trees, grass, and shrubbery of Balala. It is thought that in a year or so this part of the colony will be much beautified. In the colony proper many trees have been planted during the year and several grass plots have been started as future seed beds.

GENERAL ADMINISTRATION.

Routine sanitary measures have been cared for as in the past, by leper labor under the supervision of one nonleprous sanitary inspector. Due to a shortage of funds to pay the leper labor, the colony has fallen below its standard of cleanliness, a matter which will be corrected as promptly as the necessary funds are forthcoming.

In order to lessen the fire risk in the colony, a new standard of construction has been adopted. In the future, no house will be constructed without a space of 5 meters on all sides. In order to conform with this standard, numerous house now existing will be rebuilt, and where necessary certain houses will be torn down; the owners will be given assistance in conforming with the regulations.

Sanitary barrio.—In order to furnish space for the lepers to build new homes, the present colony site being too crowded, a sanitary barrio has been plotted out on the flat below the incinerating plant; the standard lots are 9 meters by 6 meters with a space of 5 meters between houses; a town square being composed of four houses, each house therefore having a lot of 2½ meters on three sides for garden use and the fourth side facing a street. Suitable trails have been constructed which will be later graded into roads leading up to the colony level. It is proposed to place a standard toilet and shower bath in a central location. From a sanitary standpoint the barrio will be satisfactory and the proximity to the colony has already made the barrio popular.

Leper farming.—As in the past, able-bodied lepers have been encouraged to take plots of land nearby for cultivation and nearly all of the fresh vegetables used in the colony are grown on the leper farms.

Nonleprous farm at Siuk.—The great difficulty with which fresh vegetables are obtained for use in Balala, prompted the attempt at farming at Siuk. A large variety of seeds was purchased from Manila and a suitable plot of land prepared but the great majority of seeds failed to germinate and the experiment has so far proven a failure.

Beds in hospital.—It will be recalled that the men's ward of the main hospital was fitted with a miscellaneous collection of broken down beds of odd sizes and shapes, taking up unnecessary room and being very uncomfortable. These beds have been removed and replaced by standard iron beds fitted with bejuco bottoms, adding greatly to the neatness of the ward and to the comfort of the patients.

Dental clinic.—During the year a dental clinic was established, at which the lepers receive attention without charge for ordinary work.

Social service.—Recently, a graduate nurse has been detailed from the Sanitary Commission, whose duties are to visit the patients in their homes, giving instruction in simple hygiene and sanitation and with the assistance of two leper practicantes, bandage those who are unable to attend the outpatient clinic. This fills a long felt need among the lepers.

Children's house.—In March, 1916, the reinforced concrete house constructed for the isolation of children born of leper parents was opened. Up to the present time, 42 children have been admitted; three of these have been returned to the colony, having been discovered to be lepers; 14 others were found to be lepers and were not admitted. A total of 13 children became lepers, or 8.4 per cent of the total number of children living, so born. In addition to the above-mentioned three children, one baby was returned to its parents because of tuberculous adenitis; five children died during an epidemic of bacillary dysentery, 2 died of marasmus and 1 of diphtheria.

Those children now living in the house are in seemingly good health. Additional children are being admitted to the house and placed in quarantine, to avoid if possible, epidemics.

Ice plant.—The ice plant being installed by the Culion Ice and Fish Company is nearing completion and should be in operation soon.

Research and experimentation.—Routine injections of the camphorated oil, chaulmoogra oil, and resorcin formula have been continued as in the past; the number of patients is gradually diminishing. From continued observation of a large number of patients, the chief of the colony does not feel that the results are encouraging.

The routine use of an aqueous solution of basic fuchsin in the treatment of the retrogressive skin lesions of leprosy has been continued with the already reported satisfactory results; in many cases the solution brings about improvement which heretofore was not hoped for. Recently the intravenous injection of the solution in strength of 1–500 has been made. The solution is excreted rapidly in the urine, being entirely eliminated in about 6 hours. While no specific curative effects were expected, it is thought that it may be serviceable in the treatment of nephritis and cystitis (several cases of acute anterior urethritis have been treated satisfactorily) since it gives rise to no symptoms even when injected in large quantities.

The well-known beneficial results obtained in leprous fever and leprous cachexia from the oral administration of Fowler's solution (liquor potassii arsenitis) prompted the chief of the colony to administer the solution intravenously; the results have been rather encouraging but must be studied in a larger number of cases before warranting publication.

A statistical study of leprosy in the Philippines has been made, using the records of the 10,000 lepers as a basis; this report will be submitted for approval and publication in a few months.

BAGUIO HOSPITAL DIVISION.

The total number of patients treated in the hospital and outdoor clinic is fully up to the record of previous years. Eighty per cent of patients treated in the hospital were Filipinos, the majority of these being charity cases. Two-thirds of the hospital cases were males and one-third females. In the outdoor clinic there was an average of 25 visits per day, for the 365 days. This average does not indicate the pressure of work in the clinic during the so-called "season," March, April, May, and June. During these months there are so many more patients, especially American and European, that the chief of the hospital cannot handle the work alone with satisfaction to himself or to patients. An intern was provided for four months during the past year, with very satisfactory results to all concerned. It is urged that provision for such an assistant during the busy season be made each year. Two additional nurses should also be provided for the same period.

The average cost of subsistence per patient for the year 1915 was ₱0.74 per day and for the year 1916, ₱0.53. It is believed that the latter figure is a very creditable showing, and the reduction is largely due to the efficient oversight of the chief nurse.

The slide in front of the hospital has shown no signs of further endangering the hospital during the past two years, possibly due to the fact that the rainy seasons have been comparatively mild.

The hospital buildings and furniture have all been painted during the past year, a long needed improvement.

BONTOC HOSPITAL DIVISION.

HOSPITAL ATTENDANCE.

During the year there were 562 admissions in the various clinics of the hospital, followed by 498 recoveries and 17 deaths; 3 cases were discharged not entirely cured. Most of the cases admitted were surgical and dermatological in nature. Medical cases were admitted in almost the same number as the average of previous years. There have been a great number of maternity cases admitted during the year, almost double as many as last year.

SURGICAL DEPARTMENT.

There were 7 major and about 54 minor operations performed.

OUT-PATIENT DEPARTMENT.

The total number of patients attending the Bontoc Hospital out-patient department during the year was 3,042. The number of treatments in the same department was 9,797. The increase of Igorot patients coming voluntarily to the dispensary for treatment has been so great that even on holidays the work of the hospital had to be done during the regular office hours. The number of prescriptions filled was also much larger than in previous years. There has been a continuos demand from the Igorots for skin disease treatment. It seems that the treatment of the *Tinea imbricata,* commonly known among them as "Culalat," with local applications of saturated solution of salycilic acid, has been found agreeable and satisfactory to them. At times their requests for this medicine had to be refused when the supply of same was almost exhausted.

DANGEROUS COMMUNICABLE DISEASES.

Varicella.—There were 39 varicella cases admitted during the year, no deaths being registered.

Measles.—Two cases of measles were isolated, followed by recovery. Both cases were found within the district of Bontoc.

SEWAGE SYSTEM.

The sewage system of the hospital has been at various times upset during the year. In consultation with the district engineer he suggested the necessity of an entire repair of the whole outfit including the septic vault, which, according to him, constitutes the main trouble which is responsible for the occasional flooding of the hospital floor, especially in the operating room, with filthy matter. Through the kindness of the provincial authorities the trouble was overcome whenever it arose. It is expected that these repairs will be made during the coming year.

RECOMMENDATIONS.

1. That the employment of one additional hospital boy be authorized for the good of the administration of the hospital.
2. That the hospital be furnished with a good obstetrical bed.

BUTUAN HOSPITAL.

As was to be expected, the most important disease treated in the hospital proper during the last year was malaria, due to the fact that this disease has been the most prevalent in the province throughout the year. Four cases of malaria remained from last year, 116 cases were admitted, 2 died, and 111 were discharged. The mortality of 1.7 per cent is remarkably low taking into account the high mortality of this disease elsewhere. The low mortality is due largely to the fact that cases are seen early and active treatment accorded with the least possible delay.

The next most important disease was beriberi. During the year 16 cases were admitted and 15 discharged apparently cured. The remaining 1 is on the way to recovery.

Among the types commonly observed are the dropsical form and the cardiac type. Generally, however, the dropsy in these cases is due to faulty circulation due to the diseased condition of the heart. The symptoms clearly point to this and treatment is rendered accordingly. Fortunately no fatal cases were registered among those treated in the hospital.

Among children, the available data are from those treated in the dispensary. Of the 118 cases treated in the dispensary, about 14 were children less than four months of age. The prevalent type among these infants is the pernicious larval form as described by Professor Albert of the University of the

Philippines. This form seldom lasted forty-eight hours and is found in those whose mothers have definite symptoms of the disease. In the milder cases, the plan resorted to is not to wean the child as advocated by Hirtota, but to continue the treatment, feeding and treating the mother for the disease. This serves a double purpose, viz, the child is not deprived of the mother's milk, which is the best milk obtainable, and the mother is relieved of the burden of buying good artificial milk for her child. As these cases are usually seen among the poorer classes, the benefits derived from this method must be great.

Ankylostomiasis, or hookworm disease, also claims its victims. Nine cases were admitted during the year. This of course excludes those cases where ankylostomiasis was found with other concurrent diseases, such as malaria, beriberi, etc. From the stool examinations made, it is almost safe to assume that about 30 to 40 per cent of the people living in the farms and outlying districts are suffering from hookworm.

There were in all 18 major operations and 5 minor operations performed in the hospital during the year, viz:

Major operations.

Tubercular peritonitis	2
Appendicitis	3
Abscess of the liver	1
Strangulated hernia	1
Hydrocele, bilateral	2
Hydrocele, unilateral	4
Fibroma of the neck	1
Ovarian cyst	1
Partial resection of a rib for pleural effusion	1
Extraction of foreign bodies	2
Total	18

Minor operations.

Amputation for sarcoma of the forefinger	1
Inguinal adenitis	1
Nasal polypus	2
Harelip	1
Total	5

Among the major operations performed, hydrocele was by far the most common. In fact, among the Manobos in the upper Agusan Valley, it is not uncommon to find persons suffering from this disease. The main cause to which it is attributed is traumatism, although it has also been observed that those suffering from it are generally also victims of malaria. The disease is usually unilateral in type and is accompanied more or less often by herpes around the scrotum and thighs. In every case, the radical treatment was resorted to as this was found to be by far the best treatment. Some of the cases were operated under general anesthesia, but others were operated upon under urea quinine anesthesia. The latter form of anaesthesia was also found to be superior in many ways to cocaine anaesthesia, as the drug can be injected in greater quantity, the danger of heart failure is less, and the anesthesia though not so quick is more lasting than the cocaine anaesthesia.

There were in all 272 admissions during the year, compared with 242 in 1915, an increase of 30 admissions. The single ward of the hospital has been taxed to its capacity most of the time, the kitchen and the small space above the stairs being also used to lodge patients. Out of 272 admissions, there were in all only 5 deaths or an average of 1.8 per cent, as compared with 5.1 per cent last year, and 7.02 per cent in 1914. The deaths are classified as follows:

Malaria	2
Tuberculosis peritonitis	1
Strangulated hernia	1
Abortion	1
Total	5

This low death rate is mainly due to the remarkable resistance of the inhabitants of the province to any infection, as well as the improved sanitary condition of lower Agusan, where patients generally come from, enabling them to have a more vigorous constitution.

The dispensary and outside department ran parallel with the preceding year, although the cases treated were more varied due to the fact that people are getting accustomed to applying for treatment. One of the serious handicaps which the hospital has been trying to overcome is the superstitious beliefs among the Manobos and the almost fanatical beliefs among the townspeople as to the cause and treatment of disease. These beliefs, of course, are widespread in the whole Archipelago, but to all indications, they are more prevalent in places far from big cities and where the people have little or no contact with others more advanced in culture. These superstitions and beliefs are being overcome by almost daily talks with patients or groups of patients in the dispensary explaining the important advantages derived from skilled medical attendance. The results have been satisfactory so far, as shown by the increasing numbers applying for treatment in the dispensary, not only of the hospital but of others established in the province as well.

The outside department is also much better this year. The outside cases usually attended are obstetrical cases. This branch of the service, however, is fast developing into proportions that will soon make it necessary to detail a nurse to give lectures to mothers and to attend to ordinary maternity cases. Dystocias in pregnancies are rare, due to the fact that women in these places are more developed and have enough work to keep their bodies in almost perfect physical training.

BAYOMBONG HOSPITAL.

During the year 1916, 363 patients entered the hospital, against 172 during 1915. Of this number 300 were Christians and 63 non-Christians; 30 were male children and 30 females; 5 deaths occurred. Many were the patients who had to be visited in private houses for lack of beds in the hospital. The educational campaign—that of persuading the poor people in this province to take advantage of the hospital and of free medical assistance—has induced many persons to apply for treatment. This was the most important factor in the spread of useful information among the people.

There were 12,243 prescriptions filled by the dispensary, of which 8 were paid for at the rate of ₱0.50 each.

Patients treated in the hospital clinics numbered 363. The increase is due to the fact that people are becoming accustomed to taking rational treatment.

The appropriation of an amount necessary for the establishment of a provincial laboratory is recommended.

LEYTE HOSPITAL.

The Leyte Hospital, which represents three years of effort on the part of the officials of Leyte and which is a comparatively large accomplishment with a relatively small outlay of money, was inaugurated with appropriate ceremonies on June 30, 1916. It was built entirely with provincial funds. The land with the houses cost ₱14,000. The district engineer, Mr. Clark, was asked to connect the two buildings by a structure of 11.5 meters, to inclose the bottom of the two houses, to install an operating room, laboratory, baths, kitchen, etc. This work was done at a cost of ₱6,700, in round numbers, making the total cost of the land and completed building about ₱21,000.

The hospital began to operate on July 10, 1916, and Dr. José Guidote, district health officer for Leyte, took charge of it on August 15, 1916.

Personnel of the hospital and their salaries.

1 chief nurse	₱900
1 nurse	720
1 nurse	360
1 nurse	360
1 practicante	360
1 cook	180
1 washerwoman	180
4 boys (servants) at ₱5 per month each	240
1 property clerk	240

All of these employees with the exception of the assistant nurses are furnished subsistence and lodging.

Expenses.

Salaries	₱250.00
Subsistence:	
July	117.00
August	187.03
September	168.81
October	152.80
November	160.15
December	140.01

As may be seen the expenses vary according to the number of patients treated during the month. The expenses incurred each month represent the minimum that can be incurred as strict economy is being observed.

Various commercial houses and some individuals donated either beds or money for the establishment of the hospital.

The total number of patients treated in the hospital from July to December inclusive was 93, and of these 49 were medical cases, 38 surgical, 3 obstetrical and 3 gynecological. During this period 9 patients died; 4 of third degree burns, 3 of dysentery, 1 of furunculosis, and 1 of typhoid fever.

RECOMMENDATIONS.

Improvements recommended for the year 1917: Appointment of one resident physician, who would act at the same time as superintendent. Installation of a lying-in room. One separate house for nurses' dormitory if there be available funds.

CUYO HOSPITAL.

PERIOD OF OPERATION.

The physician to take charge of the hospital arrived May 25, and the dispensary was opened May 27, 1916. The first ward patient was admitted July 25, the next day after the beds were received. The dispensary, therefore, has been in operation for more than seven, and the hospital proper for more than five months.

PERSONNEL.

The personnel of the hospital at present consists of one physician, one nurse, one clerk, two helpers, one cook, and one laundrywoman.

RELATION OF THE HOSPITAL WITH THE PEOPLE.

The hospital was opened at the very height of the campaign for the last election of the municipal and provincial officials It was not surprising then that each of the two parties here claimed the credit of its establishment. This is here mentioned merely as evidence of the fact that its establishment had been desired by the people, at least the leaders of the parties thought so. And judging from our own experience, we also share this belief, and we further believe that they need it. The isolated position of this home of 14,000 to 15,000 people, the poor transportation facilities to and from other parts of the Islands, with medical attendance only on occasional visits of the district health officer and very rare chance visits of a private practitioner, all contribute to this need.

In spite of this need and even of the recognized general desire, yet it has been, as it is everywhere, a problem to combat quackery and mysticism. And as in every place where there is enough credulity on the part of the populace to have encouraged them, there is enough credulity to believe too much in drug treatment and hence expect too much from it. It is often practically useless, and even injurious to the institution he represents, for the physician to keep repeating to his patients, "You must come back here at such and such a time," "This medicine is not enough to cure you, you must follow my advice," etc. Dispensary work is at best but a palliative. We have, it is true, the hospital, but its scope of service is necessarily limited. Only by long and constant effort, giving the people the best treatment under the circumstances, can we hope to educate as well as attract them to take advantage of the medical attendance offerred them.

It has also been a question of no little importance to make the well-to-do understand that the dispensary is free only to the indigent poor. When the charges for these people were put into effect in September there was a perceptible decrease in the daily dispensary calls. This was especially encouraged as we later found out, by rumors misconstruing such charges to be for all patients. However, that decrease was but momentary, and it ceased when people found out their mistake.

In short, the hospital staff have tried to make friends with all the people regardless of party affiliation; they are trying to combat quackery and mysticism by directly educating the people who encourage them; they are trying to show the intention of the Service of providing this medical attention chiefly for the poor; and these efforts so far have been meeting with success.

PATIENTS.

There have been admitted to the wards in a period of a little over five months 26 males and 11 females, an average of 7 newly admitted patients a month. Of these, 12 came with the expectation of staying in the hospital, and the remaining 25 had to be urged to stay. This is not at all discouraging in this beginning of the hospital. Of the 37, 36 were charity patients and the remaining 1 was a pay ward patient with regular hospital diet.

The age of the hospital patients ranged from 8 months to 66 years, distributed according to age as follows:

	Cases.
Below 10 years	3
10 to 20 years	14
20 to 30 years	6
30 to 40 years	8
50 to 70 years	6

Of the 37 cases admitted since the opening of the hospital on July 25, 20 were medical and 17 were surgical cases. There were no cases of typhoid, and only one case has ever been brought to the notice of the staff before the hospital was supplied to admit patients. Two dysentery cases were induced to remain in the hospital, the most of such cases having been treated in the outpatient department. The malarial cases seen in the dispensary and in the hospital were all contracted outside of the island of Cuyo. Gastro-intestinal diseases were the most prevalent complaints found, especially during June, July, and August. Further investigation of gastrointestinal complaints will be made after the arrival af the compound microscope provided with immersion lens which has been requisitioned for.

Of the 32 cases discharged during the period ending December 31, 1916, 24 had recovered, 6 were merely improved, and 2 not improved. One of these 2 one was an extensive carcinoma of the breast with metastasis in the visceral organs and who died one week after discharge. The other was also a case of extensive carcinoma of the breast. Operation was not attempted for lack of surgical instruments.

Many of these hospital cases cannot stay in the hospital until they are discharged by the physicians. As soon as they are a little better they believe it is time for them to go home.

SUMMARY AND RECOMMENDATIONS.

1. The inadequacy of simply renting a house for the hospital.
2. Equipment of quarters at present in this temporary hospital is limited to helpers. In case a male nurse be detailed here, he may be required to have his quarters in the hospital, but at present there is no provision therefor.
3. That a male nurse be detailed to this hospital in addition to the female nurse.

REPORT OF THE DIVISION OF SANITATION OF THE CITY OF MANILA.

[Dr. SALVADOR V. DEL ROSARIO, Chief of Division.]

DANGEROUS COMMUNICABLE DISEASES.

NOTIFICATION.

Old legislation and ordinances of the city dealing with the reporting of all cases of dangerous communicable diseases occurring in the city of Manila, had proven in the past almost entirely inoperative and valueless through the neglect of some and the not very benevolent attitude of other members of the profession toward any regulation of so mandatory a character.

Long periods of tolerance had gone so far as to create a widespread misapprehension in regard to the right a well-organized community has to enforce regulations for the reporting of dangerous communicable diseases. The condition was one of relaxation and passive resistance with the consequent loss to the Health Service of one of the most important sources of information upon which any move for the control of epidemic diseases is to be necessarily based.

With a view of doing away with such an undesirable condition of affairs, the division prepared a handy but altogether comprehensive printed postal card which is shown in detail below:

(*Front.*)

NOTIFICATION CARD.

MANILA, P. I., ..., 191

Disease or suspected disease .... *Type or form of the disease* ....

Clinical diagnosis? .... *Confirmed in laboratory?* .... *By whom* ....

Time and date of onset of disease ....

Patient's name .... *Age* .... *Sex* .... *Race* ....

Patient's address .... { *Resident?* .... / *Transient?* .... *How long in city* ....

Number in household: Adults .... *Children* ....

Any previous case in household? .... *When?* ....

Occupation .... { *School attended* .... / *Place of employment* ....

Probable source or origin of infection ....

Specify what immunization method, if any, and how long ago has previously been used ....

....

(*Back.*)

In compliance with the provisions of the Sanitary Code as contained in the Revised Ordinances, city of Manila, I wish to report a case of dangerous communicable disease as described on the reverse side.

Yours respectfully,

Signature .... *M. D.*

Address ....

The following diseases are strictly reportable:

Smallpox. Typhoid and Pertussis.
Varicella. Paratyphoid. Plague.
Measles. Dysentery. Cerebro-spinal
Cholera. Diphtheria. Meningitis.
Tuberculosis. Leprosy.

The Director of Health,
Manila, P. I.

2—610

Instructions accompanying these cards, on being distributed to all members of the medical profession throughout the city, were contained in a circular-letter which reads as follows:

"MANILA, *June* ...., *1916.*

Dr. ....
No. .... Calle ....
Manila, P. I.

DEAR DOCTOR: I do not suppose I venture too much in believing you deeply interested in lowering our death-rate as well as in preventing the occasional occurrence of, and mortality due to, dangerous communicable diseases. These points, especially the latter, call for a full coöperation of the practicing physician by making accurate and valuable returns regarding each and every case of dangerous communicable disease that may fall under his professional observation. Let me still be confident that you will give the idea a most enthusiastic and hearty support.

If you need more reasons, I would only quote for your consideration a current saying among sanitarians, viz, that no sanitary or epidemiological work can even be started, much less successfully carried out, unless based on good reliable information of which statistics are but a simple outcome. Curves, diagrams, charts, maps, etc., all of which so convincingly speak to the skeptical laity's mind, are but different ways of expressing numerical data closely related to health and life problems. You will now realize how desirable it is to this office to secure the benefit of your coöperation at all times.

With this end in view, this office has prepared a model "postal card" suitable for the notification of anyone of the dangerous communicable diseases given in the short list on the card, which, for the time being, are those to be reported. The data required by a full notification are numerous, but it is not the intention of this office to include all and everyone of them in the preliminary information the private physician must furnish; but as a matter of fact there are only included a few general data for identification and such others as, in a great number of cases, are only possessed by or are most easily obtainable by the family physician.

On the other hand, there is nothing in the notification by card that can hamper the interests of any person concerned. In no case will a patient be deprived of his right of being attended by the physician he may prefer, nor will this physician be prevented from attending his own client. Regulations regarding hospitalization, such as they now exist, will not be altered in the least; and on the contrary, the following advantages may be enjoyed:

(a) *For patients and attending physicians.*—Early free examination by the Bureau of Science of any discharges of the patient through which doubtful points of diagnosis may be cleared up, and adequate (specific) therapeutic and immunizing methods may be promptly resorted to.

(b) *For the Health Service and hence for the convenience and welfare of the community.*—Early recognition of the existence of a focus of propagation of a dangerous communicable disease as well as of the secondary foci closely related to the former (unreported cases, exposed persons, carriers, etc.), and the employment of quick and intensive sanitary measures for the protection of people other than the patient.

I wish now, to invite your attention to certain important points, on the full comprehension of which the success of an anti-epidemic campaign probably depends:

1. Notification by no means tends to nullify or supersede the role played by the attending physician. What the attending physician really does in making a notification is to procure for his patient the maximum of obtainable advantages without infringing the right of the community to be protected against the reported disease.
2. Do not wait until your diagnosis is thoroughly confirmed before notifying the case. Mild and atypical cases, too often encountered among dangerous communicable diseases, yet as capable as typical cases of spreading the disease, are good reasons for notifying such doubtful cases as *suspected.* Moreover, there are certain diseases in which infectivity is confined to the 3 to 5 first days.
3. If unfortunately your patient dies before notification is made, do not fail to notify the case even if you had had no time to attend to it.

Herewith inclosed you will please find 10 "notification cards" (post paid), a number which will probably meet your present needs. Whenever you need more, please notify this office or any of the city health stations and you will be furnished the necessary number. Although in all cases a notification by card will be requisite, this should not prevent a preliminary rush report being made by telephone to be closely followed by the notification by card.

Chapter 78 of the Revised Ordinances, City of Manila, includes a number of explicit provisions regarding dangerous communicable disease with special reference to the duty of physicians to report any case of them to the Health Service. My only purpose in reminding you of these provisions is to express to you how unpleasant it would be for this office to have to resort to a judicial prosecution in procuring compliance with law. This office by far prefers to lay the stress of this compliance upon your loyalty to the principles of modern sanitary science as a physician, and to your patriotic duties as a citizen.

Very respectfully.

(Sgd.) J. D. LONG,
Director of Health.

Following this, Circular O–62, July 1, 1916, was issued to all medical officers in charge of health stations, city of Manila:

PHILIPPINE HEALTH SERVICE,
Manila, July 1,1916.

CIRCULAR
0–62

To all medical officers in charge of health stations, city of Manila:

Inclosed herewith is a copy of a letter, in English and Spanish, addressed to all practicing physicians in the city of Manila, in which they are requested to report to this Service promptly all cases of dangerous communicable disease which may come to their attention. They have all been furnished with a form of card for the purpose in view. The medical officer in charge of the health station should read the letter carefully and acquaint himself thoroughly with its contents.

In the event of any cards reaching a health station, the case reported should receive all necessary attention promptly and a full report kept on the form of transfer slip. Should the case reported on a card reside in another health district, the health station in interest should be notified at once by telephone.

All cards received will be forwarded to the central office on the day next following their receipt at a station, and no cards will be filed nor kept by the station.

Fifty notification cards have been placed on file at each health station, which will be used to supply the needs of physicians who may request additional cards.

Each station should be prepared to fill promptly and courteously all requisitions from physicians for culture tubes for cholera, diphtheria, etc.

(Sgd.) V. JESUS,
Acting Director of Health.

A new and more scientific system of reporting cases of dangerous communicable diseases was thus created with the decided acceptance of the profession which is now in the way of rendering more valuable assistance to the Service in the future.

CHOLERA AND CHOLERA CARRIERS.

The working capacity of the division has been tested to the limit due to the presence of cholera in the city during 1916.

The last quarter of 1915 was remarkable on account of being almost entirely free from cholera, and were it not for two cases during December, 1915, the quarter could be termed as exceptionally clean as regards cholera. The presence of these two cases, however, was taken advantage of as highly significant, and intensive work toward a sort of preparedness was undertaken, and full results were obtained in keeping the infection under control with the minimum incidence of fourteen positive cases in January, nine in February, one in March, and five in April. Unfortunately, from May up to the end of the year the infection showed a high prevalence especially during August and September and the early part of December as may be noted in the table below:

Months.	Cholera cases.			
	Total reported.	Positive.		Fatality per 100 cases.
		Cases.	Deaths.	
January	16	14	8	57.14
February	16	9	3	33.33
March	5	1	0	00.00
April	7	5	5	100.00
May	57	46	22	47.28
June	44	34	15	44.11
July	79	73	30	41.09
August	342	320	146	45.62
September	415	388	175	45.10
October	91	81	38	46.91
November	40	35	8	22.85
December	228	208	63	30.28
Total	1,340	1,214	513	
Average yearly fatality				42.25

This table is but a confirmation of the experience gained here and abroad as regards cholera epidemics; the climax of the situation was reached in August and September the subsidence being apparent in October and November.

The unexpected jump shown in the chart for December was due to new factors which will be explained below.

It was through a painstaking investigation personally conducted by the Director assisted by his chiefs of divisions that the factors concerned were promptly discovered. Through the keenness and intelligence of one of the Filipino assistant sanitary inspectors on duty at Health District No. 2, Meisic, it was learned that for nearly forty-eight hours prior to the unexpected explosion an abnormally large stock of fish and shrimp had been offered for sale in the public markets of Meisic and Tondo, and that, being far in excess of the daily demand, it was preserved by using imperfect methods of refrigeration and then sold at retail prices much lower than usual.

The *additional factor* which played so large a part in the sudden outbreak was thus discovered and explained by the consumption by the poorer class of people of fish in a semidecomposing condition. The question was further gone into and it was then that the presence of the *peridinium* in near-by waters of Manila Bay was recognized.

Peridinium is a minute form of protozoan life described long ago by Dr. H. M. Smith, of the United States Fish Commission. They make their appearance from time to time in Manila Bay and possibly in all Filipino waters, being particularly abundant near the surface and imparting to large zones a rustlike reddish coloration usually visible at long distances. The harmful effect of this type of protozoa on the fish is very marked and large numbers die, supposedly due to a mechanical obstruction of the air passages (gills in fish) with consequent suffocation. The invasion of certain water areas by the *peridinium* takes place ordinarily so suddenly that, although the effects of its appearance eventually clear large zones of water of all kinds of fish life, the fact is that in the beginning at least large numbers of fish of all descriptions succumb as early victims of the unexpected invasion.

It is not claimed that conclusive evidence could be obtained so as to enable the Service to assert that either of the following factors was operative to the exclusion of the others:

1. That the ingestion of decomposed food played only the part of a contributing irritating factor in the development of cholera in cholera-carriers.
2. That the cases occurring during the explosive period (November 30 to December 5, inclusive) were all cases of ordinary *food-poisoning* with no relation whatever to cholera.

There can be no question that a large number of the cases were of true cholera, but for the remainder some doubt still exists as to whether they were cases of *food-poisoning* or otherwise. The facts supporting this latter view (food poisoning) are as follows:

(*a*) The wave of cholera incidence, just prior to the explosion, showed a marked tendency toward decline (see 2d chart below), and the explosion can only be explained, under these circumstances, by the intervening agency of a newly associated factor.

(*b*) The small percentage of cases bacteriologically confirmed during the explosion. There are outbreaks of *food poisoning* in which the clinical picture is hardly distinguishable, if at all, from that of a genuine cholera case except through careful laboratory investigation.

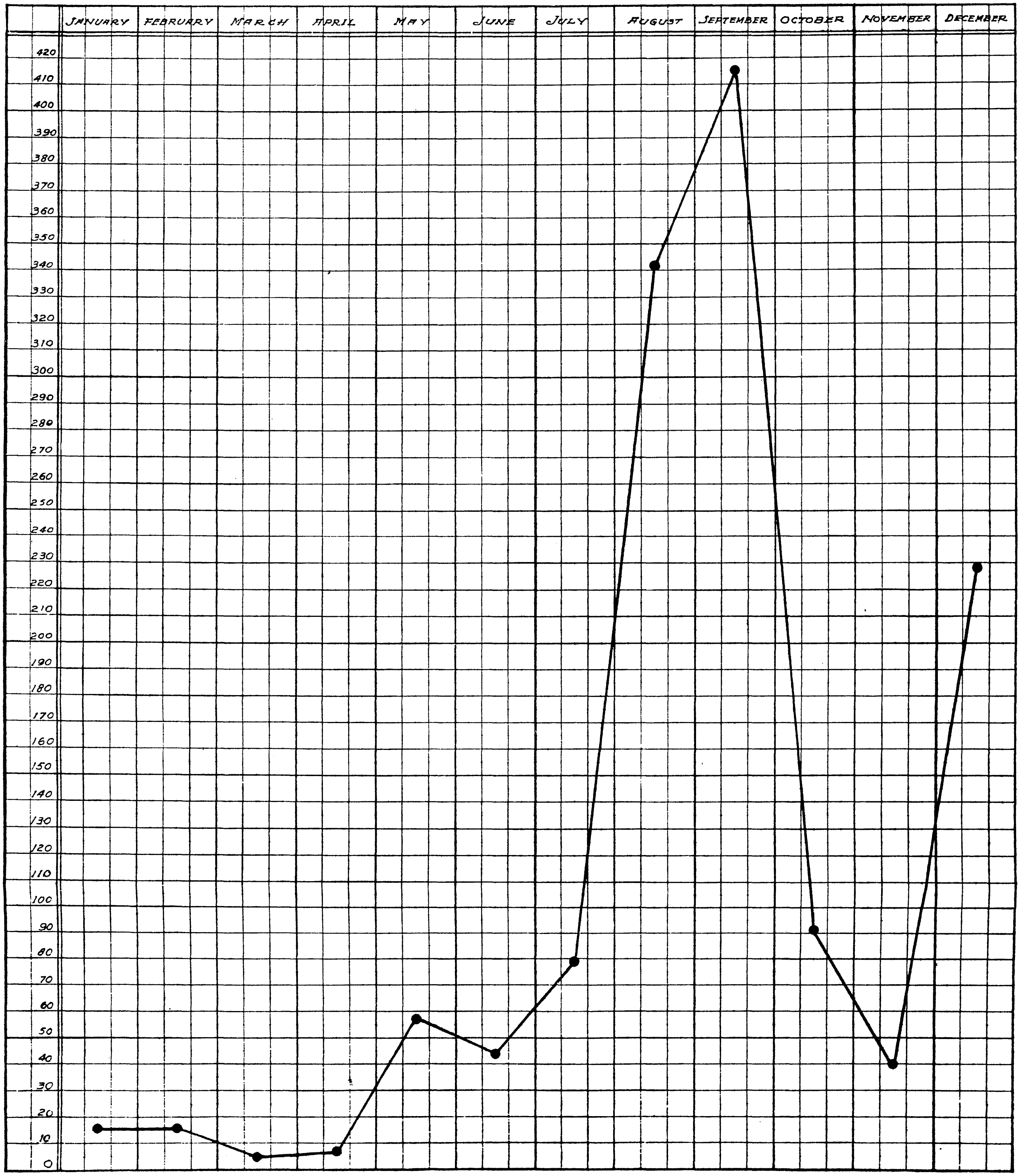
(*c*) The particularly low mortality shown by the explosive cases, in no way comparable to the lowest mortality rate shown by cholera outbreaks, together with a peculiarly quick tendency to recovery.

This notwithstanding, so strongly did these cases impress the expert clinicians of San Lazaro and so emphatic were they in their belief as to the nature of the cases, that they had, with almost no exception, to be classified as cholera cases though without bacteriologic confirmation.

PHILIPPINE HEALTH SERVICE.

Diagram showing cholera cases in 1916.

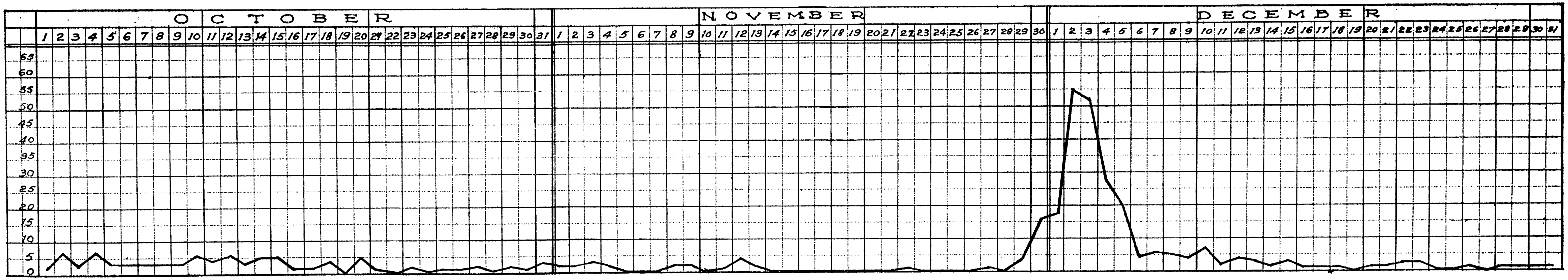
[Monthly totals.]



PHILIPPINE HEALTH SERVICE.

Diagram showing cholera cases for the last quarter, 1916.

[Daily.]



Following is a table showing the figures relating to the 6-day explosion:

Date.	Total number.	Positive bacteriologically.		Positive clinically only.		Negative bacteriologically and clinically.	
		Cases.	Death.	Cases.	Death.	Cases.	Death.
November 30, 1916	16	10	5	6	2		
December 1, 1916	18	2	2	16	4		
December 2, 1916	56	10	2	44	13	2	1
December 3, 1916	51	17	9	32	9	2	
December 4, 1916	28	4	2	21	4	3	
December 5, 1916	20	2	1	15	3	3	2
Grand total	189	45	21	134	35	10	3
Averages—General fatality		*Pr. ct.* 31.21	*Pr. ct.* 46.66	*Pr. ct.*	*Pr. ct.* 26.11	*Pr. ct.*	*Pr. ct.* 30.00

The possible contribution of *Vibrio kegallensis* or *Paracholerae* (Castellani) to the explosion in question was also investigated on request of the Council of Hygiene wherefrom the following correspondence was originated:

MANILA, *December 7, 1916.*

The DIRECTOR OF HEALTH,
Manila, P. I.

SIR: Due to the sudden increase experienced of cholera in this city during the first days of the month, I have the honor to inform you that a session was held on the 6th instant by the Council of Hygiene, where, among other resolutions, the following was adopted:

1. Be it resolved to recommend to the Director of Health the advisability of making an investigation as to whether ptomaine intoxication or paracholera was the cause of the recrudescence of the cholera epidemic in Manila, in view of the fact that the present outbreak gives a very low mortality, 12 per cent as affirmed by Dr. Goff, and in view also of the fact that in accordance with the data furnished by Dr. Johnston the proportion of bacteriologically positive cases to the number of specimens examined is very low.

* * * * * * *

I have the honor to place before you the foregoing for consideration and action.

Very respectfully.

FERNANDO CALDERÓN,
President.

[1st indorsement.]

MANILA, *December 12, 1916.*

Respectfully referred to the Director, Bureau of Science, inviting attention to the inclosed letter from the President, Council of Hygiene, with particular reference to resolution 1 thereof, and requesting that the matter of the implication of *Vibrio kegallensis* or *Paracholerae* in the recent cholera explosion be brought to the attention of the bacteriologist in charge of research work on tropical diseases for a thorough study of such an interesting point. Attention is further invited, in this connection, to an article published by Aldo Castellani in No. 2882, March 25, 1916, of the British Medical Journal, as one of the available references.

It is understood that every possible assistance on the part of this office will be made available and that a reply with the experimental findings will meet the highest appreciation of this office.

(Sgd.) J. D. LONG,
Director of Health.

[2d indorsement.]

BUREAU OF SCIENCE,
Manila, December 19, 1916.

Respectfully returned to the Director of Health with the following information. The Chief, San Lazaro Hospital, informs me that the first cases of the recent outbreak began to be admitted November 29 and continued until the 9th of December. The following table shows the number of specimens received from San Lazaro and the positive results:

Feces for cholera.

Date.	Received.	Positive.
November 29	11	1
November 30	11	9
December 1	33	14
December 2	46	4
December 4	106	6
December 5	255	28
December 6	88	2
December 7	74	----------
December 8	40	----------
December 9	24	----------
Total	688	64

(Per cent positive, 9+.)

During this same period 34 specimens from bodies autopsied at the San Lazaro Hospital morgue were examined with result as shown below:

Date.	Intestine.	Gall bladder.	Positive intestine.	Positive gall bladder.
December 1	2	2	2	2
December 3	3	3	3	----------
December 4	8	8	7	5
December 6	3	3	----------	----------
December 8	1	1	----------	----------
Total	17	17	12	7

With reference to your inquiry relative to the role played by *V. kegallensis* (Castellani), beg to state that the most peculiar feature noted by me during the period covered by this outbreak was the almost total absence of suspicious motility in specimens examined in hanging drop. A nonagglutinable vibrio was isolated from one intestine which did not correspond to Castellani's organism, but which had the following characteristics:

Motility, typically cholera-like.

Morphology, larger and thicker than true cholera with several polar flagella.

Growth, typically cholera-like on Dieudonnée. Did not produce indol, Haemolysis on blood agar. Absolutely no agglutination with a cholera immune serum of a titre or 1–5000 even with undiluted serum, in contradistinction to V. kegallensis which agglutinations in 1–10 and 1–20 dilutions.

With the exception of this strain referred to above no other nonagglutinating vibrio was noted.

A number of articles of food, oysters, crabs, shrimp, several varieties of bagong, fresh vegetables, etc., were examined but no vibrio were found.

The biological facts are such as to indicate that, with the exception of the new positive cases, the large majority of those affected did not have cholera but rather an acute gastro-intestinal disturbance.

(Sgd.) ALVIN J. COX,
Director, Bureau of Science.

[3d indorsement.]

MANILA, *December 28, 1916.*

Respectfully referred to the Chief, San Lazaro Hospital for whatever comment he may care to make in connection with the investigation requested by the President, Council of Hygiene.

(Sgd.) J. D. LONG,
Director of Health.

[4th indorsement.]

PHILIPPINE HEALTH SERVICE,
SAN LAZARO HOSPITAL,
Manila, P. I., December 29, 1916.

Respectfully returned to the Director of Health.

The mortality among cholera cases in San Lazaro for the past eight months has been as follows:

May, 41 per cent; June, 22 per cent; July, 26 per cent; August, 36 per cent; September, 28 per cent; October, 30 per cent; November, 24 per cent, and December, 23 per cent, with an average of about 29 per cent. The high mortality in May, when there were only 17 cases, was due to the great severity of these few. In September there were 393 cases, in August 205, and in December 201. It will be noted that the mortality in December has been 23 per cent. The mortality of 12 per cent mentioned within was simply the percentage of deaths during the first few days of the outbreak based on the admissions, as for example, if fifty people are admitted in one day and five die the mortality for that day is 10 per cent, but, after two or three weeks when the last one of these patients is finally disposed of, the deaths from nephritis, pulmonary troubles, and one thing and another, together with the discharges not cholera, etc., will probably bring the death rate up to 20 or 25 per cent, as the case in December.

The 9 per cent of positive specimens mentioned is of slight significance, as all of the cases except those which died promptly had at least two specimens, and those found positive at least three or four—also the specimens of carriers are included, these of course having been positive before they entered the hospital.

It might be mentioned incidentally that of 20 patients dying of cholera in this hospital from December 5 to 15, the specimens of four only were found positive by the Bureau of Science.

No one has less wish than the undersigned to belittle the work of the laboratory, but it is not always possible to accept such work, especially when the results are simply negative, as having any particular bearing on diagnosis, and this statement is peculiarly applicable to acute contagious diseases.

There can be no question whatever as to diagnosis in the last outbreak, all of the classical symptoms of cholera were present, and it differed in no way from other outbreaks.

These cases were cholera as stated, or there has never been any in Manila.

The Philippine Health Service would obviously be glad to be able to know that only a few cases of cholera were present, but it is useless and futile to blink at the facts, and not only futile but dangerous to speak of gastro-intestinal disturbances, ptomaine poisoning, etc., in this connection, as being anything more than contributory causes of the cholera outbreak. There were doubtless many cases of gastro-intestinal disturbances and ptomaine poisonings in Manila, but of the cases discharged from the cholera department of this hospital in December only about a dozen or fifteen came under these heads, and those were, of course, discharged not cholera; there was also one death not cholera.

(Sgd.) A. P. Goff,
Chief, San Lazaro Hospital,
Philippine Health Service.

CHOLERA CARRIERS.

Cholera carriers have been a topic for much speculation. While it was the hope of the medical men in the Service that the simple knowledge of the fact of vibriocarrying would be of positive advantage for the control of cholera epidemics, new facts have come to light which make the matter somewhat more difficult than was at first expected.

No effort has been spared to locate carriers—the well-known bridge factors in the perpetuation (endemicity) of cholera.

As may be seen from the table below, the survey included three groups of individuals under suspicion of being infected:

(*a*) Contacts (immediate).
(*b*) Intestinal infection survey (remote contacts).
(*c*) Dead bodies (not cholera).

The collection of specimens was made by the following offices and institutions:

1. Five city health stations.
2. Bilibid Prison.
3. Quarantine Office.
4. Hawaiian Sugar Planters' Association.

Health districts.	Contacts.		I. I. survey.		D. bodies.		Total.	
	Number.	Positive.	Number.	Positive.	Number.	Positive.	Number.	Positive.
No. 1, Intramuros	5,026	41	2,085	16	273	27	7,384	84
No. 2, Meisic	37,206	225	2,420	13	1,364	20	40,990	258
No. 4, Sampaloc	17,131	130	244	5	329	8	17,704	143
No. 5, Tondo	35,085	282	574	1	2,316	14	37,915	297
No. 6, Paco	11,027	62	417		701	6	12,145	68
Bilibid Prison			112,562	743			112,562	743
Q. Service and Customs			13,185	35			13,185	35
H. S. P. Association			2,059	15			2,089	15
Totals	105,415	740	133,576	828	4,983	75	243,974	1,643
Percentages	0.70		0.61		1.50		0.67	

This table shows a total of 243,974 specimens with 1,643 positives or a percentage of 0.67 positives.

In connection with a thorough understanding of these figures, the following facts are cited as factors which make their interpretation quite difficult:

(*a*) Intermittency in the discharge of bacilli. There are on record (see Report on Bilibid Prison sanitation) negatives as carriers who only proved positive after the third, fourth, or fifth specimen was taken.

(*b*) The presence of cholera spirilla in the gall bladder in a number of dead bodies, a fact that when not associated with the intestinal discharge (as established by Dr. Schobl, Bureau of Science) might account for the intermittency referred to in paragraph (*a*).

(*c*) The epidemiological interpretation of the variable number of carriers in regard to any actual or threatening epidemic. As far as the experience of the Service goes, the conclusions are:

> (*aa*) The presence of a comparatively great number of carriers is of decidedly favorable significance as they represent the only available index of a condition of tolerance, if not of immunity (*immunitas non sterilans*, Ehrlich). This does not exclude the possibility of immune people existing showing no trace of being *carriers*.
>
> (*bb*) The danger from a large number of carriers exists only when they are not kept in *isolation*, as in this case they would continue to be a menace not to themselves[1] but to unaffected persons.
>
> (*cc*) A comparatively small number of carriers, or the lack thereof, has no positive significance, except when coinciding with a great rise in the number of cases, in which event it may be taken as indicating that the process of natural immunization is either disturbed or stopped.

From a number of examinations made by the Bureau of Science in dead bodies (cases of cholera) the occurrence of the spirillum in the gall-bladder has been demonstrated as follows:

Health districts.	Loop of intestine.		Gall bladder.	
	Samples.	Positive.	Samples.	Positive.
No. 1, Intramuros	18	15	17	8
No. 2, Meisic	60	47	58	33
No. 4, Sampaloc	47	42	40	23
No. 5, Tondo	65	55	62	34
No. 6, Paco	18	15	18	8
Total	208	174	195	106

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[1] There is no record of any vibrio-carrier who developed symptoms of cholera either in Bilibid Prison (743 carriers) or in San Lazaro Hospital (825 carriers).

SUMMARY OF MEASURES AND SUGGESTIONS AS REGARDS CHOLERA AND CHOLERA CARRIERS.

1. No change has been made in the general scheme published last year.

2. Special emphasis has been laid on:

(*a*) Construction of temporary public closets to meet the urgent needs of the campaign. Upon request of the division, the city of Manila constructed, principally in Tondo District, 11 new temporary closets which, together with 2 permanent ones also in Tondo, make a total of 13. Arrangements were made to have all public closets disinfected at least once a day during the whole epidemic period.

(*b*) Strict surveillance over all city markets and all food stuffs, and compulsory disinfection of hands of those who had just used the adjoining public closets.

(*c*) A campaign of education through popular lectures delivered at large factories, schools and some other places by members of the Council of Hygiene Doctors Valdes, Calderon, Albert and Guerrero and some officials of the Health Service.

3. The survey of carriers has been greatly extended and intensified in accordance with the new facts disclosed during this epidemic. Circular 0–78 dated August 17, 1916, issued for this special purpose reads as follows:

PHILIPPINE HEALTH SERVICE,
Manila, August 17, 1916.

CIRCULAR }
0–78 }

To all medical officers in charge of city health districts, infectious disease hospitals, and detention wards.

Among other new facts recently disclosed with reference to the course followed by cholera epidemics one of the most prominent is the intermittency observed in the discharge of bacilli by some persons who had been proved to be cholera carriers. Persons were found who had been carriers on four different occasions with distinct negative intervals averaging from two to six days.

This makes it imperative for health officers to no longer consider as absolutely safe, those individuals who having recovered from cholera or having been once recognized as cholera carriers have been released from isolation after three or four negative results from examination of their feces.

The following procedure is therefore adopted for the future:

1. In the bacillus-carrying survey made in and around the infected spots the taking of stool specimens shall be insisted upon at least three times in persons showing negative results. An accurate register of this survey will be kept in accordance with the accompanying model blank No. 1.

2. Persons discharged from infectious disease hospitals and detention wards (recovered cases and carriers) shall at the time of their release have their residence address verified by an assistant sanitary inspector. An

accurate list with the names of persons so discharged and their residence will be made daily and forwarded to the corresponding health station. A preliminary report by telephone will precede this written list.

3. Medical officers of health districts will see that a register be kept (see attached blank No. 2) of those persons discharged from infectious disease hospitals and a weekly stool specimen taken until a period of two (2) months is covered. The register will show how many times each person has shown previous negative results. Any change of residence shall be reported to the corresponding station. It is understood that any *positive* result shall cause the carrier to be again confined at San Lazaro.

4. The medical officer in charge of Bilibid Prison is hereby instructed not to permit any prisoner under suspicion as a cholera carrier to be detailed to any outside work, and in case of release from the institution, such persons shall be subject to the same rule as observed in San Lazaro.

(Sgd.) J. D. LONG,
Director of Health.

Reports of persons never previously sick with cholera or recognized as carriers from whom stool specimens have been taken as directed by Circular 0–78.

Health districts.	First week.		Second week.		Third week.	
	Number specimens.	Positive.	Number specimens.	Positive.	Number specimens.	Positive.
No. 1, Intramuros	2,060	10	1,080	--------	995	--------
No. 2, Meisic	11,881	40	8,115	36	6,601	19
No. 4, Sampaloc	3,982	89	2,630	6	2,205	11
No. 5, Tondo	27,369	148	4,501	35	2,397	2
No. 6, Paco	1,992	5	695	5	34	--------
Total	47,284	292	17,021	82	12,232	32

Specimens taken from cholera cases and carriers released from isolation at San Lazaro Hospital.

Health districts.	First week.		Second week.		Third week.		Fourth week.	
	Number specimens.	Positive.	Number specimens.	Positive.	Number specimens.	Positive.	Number specimens.	Positive.
No. 1, Intramuros	280	-------	277	-------	262	-------	252	-------
No. 2, Meisic	296	3	286	-------	182	3	132	1
No. 4, Sampaloc	116	6	84	2	80	-------	65	-------
No. 5, Tondo	335	-------	310	1	276	-------	226	-------
No. 6, Paco	72	1	56	-------	40	-------	44	-------
Total	1,099	10	1,013	3	840	3	719	1

Health districts.	Fifth week.		Sixth week.		Seventh week.		Eighth week.	
	Number specimens.	Positive.	Number specimens.	Positive.	Number specimens.	Positive.	Number specimens.	Positive.
No. 1, Intramuros	240	-------	210	-------	195	-------	200	-------
No. 2, Meisic	116	2	111	1	98	1	116	-------
No. 4, Sampaloc	71	1	68	2	60	-------	57	1
No. 5, Tondo	204	-------	188	1	172	1	142	-------
No. 6, Paco	42	-------	37	-------	33	-------	30	-------
Total	673	3	614	4	558	2	545	1

SUGGESTIONS.

The following are respectfully submitted:

1. Aside from the fact that *invisible* carriers (those carrying but not discharging spirilla-gall-bladder spirillum carriers and possibly others) are, as such beyond control, there are a number of *visible* carriers those who actually carry and discharge spirilla and represent to a certain extent a condition of tolerance toward cholera germs. This undoubtedly calls for a permanent survey of bacillus-carriers even during non-epidemic times. But, as the above tables show that, through variable periods of *intermittency,* as long a period as 8 weeks may elapse before a cholera patient or carrier discharged from San Lazaro Hospital proves himself again a carrier, it is obvious that a revision of the methods employed in the survey should be sought for and changes accordingly introduced.

2. As food supply has been pointed out as a primary factor (next to the existing specific germ) in the occurrence of doubtful or mixed cases closely ressembling clinical cholera, it is believed that the Service needs a competent well-trained veterinarian with experience in the inspection of food, who as the head of a number of assistant sanitary inspectors would take charge of the inspection of all markets, cold-stores and similar places in the city in so far, principally, as fresh meat, fish, poultry, milk, vegetables and fruits are concerned.

TYPHOID FEVER.

Although not entirely satisfactory as yet, noticeable progress has been accomplished in the reporting of cases of typhoid fever during 1916.

For a long time previous it had been the practice among certain private physicians of the city not to report cases of typhoid fever except those resulting in death of the patient in which case they were bound, no matter how reluctantly, to issue the death-certificate giving to the best of their knowledge the true cause of the death. Conditions, however, were greatly changed from the date of issuance (about July 1, 1916) of the circular letter to the practising physicians at the City requesting a notification by card of the prevailing dangerous communicable diseases.

Following is a table showing figures relating to the prevalence and mortality by months of typhoid fever during 1916:

Number of—	Month.												
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Cases reported	12	2	12	11	24	33	20	26	18	14	14	57	243
Deaths not previously reported as cases	5	6	----	2	----	----	2	----	3	2	2	5	27
Deaths registered among residents	8	7	5	8	8	7	10	8	11	7	7	12	98

Percentage of cases not reported while alive 10
Gross percentage of deaths 36.29

While this table shows a situation which compares very favorably with the previous one, it is still attended by the following drawbacks in the reporting of the cases as usually made at present:

1. No proper distinction is drawn, in each case, as to whether or not a *serological diagnosis* has been employed.
2. Cases are usually reported as typhoid with no regard to the role (partial or total) which paratyphoid A or paratyphoid B may play in each case.

To meet this and other subordinate problems a Board was appointed by Special Order No. 11, November 24, 1916, "for a full investigation of the causes for the persistence of the infection of typhoid fever in the City of Manila."

The board consisted of: Dr. Hugh de Valin, Passed Assistant Surgeon, U. S. Public Health Service; Dr. Proceso Gabriel, Assistant Surgeon, Philippine Health Service; Dr. H. G. Wade, Bacteriologist, Bureau of Science.

The board convened early after appointment, and a preliminary report of its activities, rendered to the Director, reads as follows:

MANILA, P. I., *December 31, 1916.*

The DIRECTOR OF HEALTH, *Manila.*

SIR: The committee for the investigation of typhoid fever in the city of Manila has the honor to transmit herewith the following preliminary report of its activities. The committee desires, however, to state that this report is to be considered as preliminary only and that the figures and conclusions herein offered cannot be considered as final in any sense of the word, as later investigations may very considerably modify the various statement herein contained. It is, however, all that the committee feels able to state at the present time:

From November 24 to the present date 114 cases reported to the Philippine Health Service as typhoid fever have been investigated. Of these, 51 occurred in the Centro Escolar de Señoritas, 59 in various parts of Manila, and 4 were imported cases from the provinces, seen in hospital.

The committee decided that in so far as possible it would be best to make its own serological diagnosis in each case investigated, and following this plan, Dr. Wade has to date made agglutination reactions in 52 of the cases. All sera were tested with bacillus typhosus and paratyphoid bacilli, strains A and B. The results were as follows: Positive for typhoid alone — 6, for paratyphoid B alone — 17, for paratyphoid A alone — 1, and negative—14. These reactions are probably specific, indicating the type of infecting organism in each case. A considerable group of cases however, showed group or coagglutination, which in some instances is confusing. In three sera, typhoid and paratyphoid B. reacted, typhoid predominating, and in four sera, typhoid and paratyphoid B reacted aqually. In these the presumption is that the infection was true typhoid. A group of seven cases gave coagglutination with both organisms, paratyphoid B predominating, but no conclusion could be arrived at without the recovery and identification of the organism. It may be noted that the question of group agglutination is not well understood and is being made the subject of considerable research at the present time, particularly in army hospitals.

Though the above results are too meager to warrant drawing any very definite conclusions, however it is interesting to note that 17 of the above cases were definitely paratyphoid B, whereas there were 6 definite and 7 probable cases of true typhoid. Excluding the 14 negative and 7 indefinitely classified cases, it is seen that 56.6 per cent of the diagnosed cases were paratyphoid B and 43.4 per cent were probably true typhoid. These results would indicate that, as has long been the opinion of laboratory diagnosticians, paratyphoid is more common in Manila than typhoid. This would also explain the impression of resident physicians that local typhoid is generally of a "mild" type. Further investigation is necessary however to warrant the foregoing as a definite conclusion.

The epidemiological data obtained relative to the cases investigated, excluding those of the Centro Escolar outbreak, did not indicate any common infecting agent, such as water supply, milk, etc., nor was it possible to demonstrate the probable source of infection in the individual cases. However, it may be noted that 17 gave clear histories of association, a short time before onset of illness, with cases of typhoid fever. This group may therefore be classified as probable "contact cases." This indicates a very high incidence of this class of case, but it is too early in the investigation to conclude that such a high proportion commonly prevails. However, these figures coupled with other epidemiological factors common to the locality, would tend to the opinion that "contact" infection is more prevalent in Manila than in the United States or Europe.

The 51 cases which occurred at the Centro Escolar de Señoritas constituted a distinct centralized outbreak. In those cases in which it was possible to make a serological diagnosis, the findings indicated that the prevailing infection was paratyphoid. As far as the records show, the outbreak probably began with a few scattering cases during the early part of November. The highest incidence of cases occurred on November 27 and 28. No further cases are reported as having occurred after December 10. It was impossible to obtain epidemiological data which indicated with any degree of clarity the probable causative factor or factors, but judging from the available information it appeared quite probable that the source of infection was within the school. Water and milk were excluded. Outbreaks of this character are frequently traceable to "carrier," but in this instance nothing definite has been demonstrated to positively indicate that the source was of such a nature. However, it is interesting to note that six of the servants gave positive serological reactions, and that these six were all employed in various capacities in the kitchen and dining room. They denied any illness prior to the outbreak, although one acknowledged having had typhoid fifteen years ago; this was the only individual giving a positive reaction with bacillus typhosus. Four of them left the school when the outbreak occurred, so it has been impossible to make examinations of the feces except in the case of the two servants who remained. So far the latter have given negative results. As the data obtainable have been so meager it is not permissible to draw definite conclusions, but it is clearly possible that in view of the fact that six servants gave positive serological reactions, the outbreak may have been caused by a servant "carrier" or one with a very mild attack who infected food eaten by the student body. An endeavor is being made to obtain more definite data with the hope of being able to indicate more clearly the probable operative factors.

Immunization against typhoid and paratyphoid being of prophylactic value, the advisability of its use in a community where the percentage of "contact cases" is high is worthy of consideration. This is particularly true for the protection of the various members of a household in which typhoid or paratyphoid occurs. The faculty of the Centro Escolar de Señoritas has instituted such vaccination of the entire student body and to date 70 scholars have been vaccinated. The committee has also received the report of the vaccination of the nursing staff of the Hospital de San Juan de Dios and of a number of individuals throughout the city in whose homes there has been typhoid. In all there have been 100 vaccinations reported. The vaccine used is a mixed vaccine of typhoid and paratyphoid prepared by the Bureau of Science.

A final report will be made at a later date, giving any additional facts which may be developed relative to local typhoid and paratyphoid and making such suggestions and recommendations as the committee may deem advisable.

Respectfully,

(Sgd.) HUGH DE VALIN,
Passed Assistant Surgeon,
United States Public Health Service, Chairman.

DYSENTERY.

Dysentery also is only beginning to be notified by the regular card, and for this reason not much reliance can as yet be placed on the results of notification. For instance, such interesting data as the type of dysentery (amoebic, bacillary, or otherwise), and whether or not confirmed by laboratory examination, are usually omitted.

Moreover, the two following tables will show, among other things, that the notification of dysentery cases was started practically only in July, 1916, and is yet far from being entirely satisfactory. Of the total number of cases (199) only about 40 per 100 were notified before death.

Dysentery in Manila for the year 1916.

Number of—	Month.												
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Cases reported	---	---	---	---	5	2	27	28	7	8	2	1	80
Deaths not previously reported as cases	5	10	16	8	15	12	13	10	15	3	4	8	119
Totals	5	10	16	8	20	14	40	38	22	11	6	9	199
Deaths registered	5	10	16	8	16	12	22	17	20	5	4	8	143

Statement of dysentery in Manila, for the year 1916.

[By ages.]

Number of—	Ages.								
	Under 2 years.	2 years to under 5 years.	5 years to 10 years.	10 years to 20 years.	20 years to 30 years.	30 years to 40 years.	40 years to 50 years.	50 years and over.	Total.
Cases reported	11	28	7	9	11	5	6	3	80
Deaths not previously reported as cases	46	38	11	6	2	4	2	10	119
Totals	57	66	18	15	13	9	8	13	199
Deaths registered	50	50	14	7	4	4	3	11	143
Percentage of mortality by ages	87.11	75.75	77.77	46.66	30.76	44.44	37.50	48.61	-------

These tables show too a general fatality of 71.85 per 100, a fact far less conclusive than would appear at first sight, due to the circumstance that many nonfatal cases are not reported (reporting just started in July, 1916).

Deaths among transients (not included in the above tables) have been registered as follows:

Mortality for dysentery among transients.

By months.	
January	--------
February	2
March	2
April	1
May	3
June	3
July	3
August	2
September	2
October	1
November	1
December	1
Total	21

By ages.	
Under 2 years	10
2 to 5 years	7
5 to 10 years	1
10 to 20 years	2
20 to 30 years	1
30 to 40 years	-------
40 to 50 years	-------
Over 50 years	-------
Total	21

DIPHTHERIA AND DIPHTHERIA CARRIERS.

At first sight it would appear that a serious gain had been made by diphtheria infection in Manila during 1916 if gross figures only were to be taken into consideration. The yearly figures by months are as follows:

Months.	Diphtheria.			Months.	Diphtheria.		
	Total reported.	Positive.			Total reported.	Positive.	
		Cases.	Deaths.			Cases.	Deaths.
1916.				1915.			
January	17	13	2	January	5	4	2
February	8	4	1	February	5	2	1
March	19	5	3	March	4	4	1
April	32	17	4	April	5	4	2
May	6	5	3	May	7	6	3
June	13	11	3	June	5	3	1
July	13	7	1	July	9	6	5
August	18	16	3	August	3	3	1
September	13	13	5	September	5	4	3
October	7	7	2	October	11	7	3
November	10	9	2	November	9	8	
December	8	7	1	December	8	8	1
Total	164	114	30	Total	76	59	23

These figures, however, if they be compared with those given by the 1915 annual report, and their exact significance set forth, leave little doubt that the distinct improvement has been the consequence of the Service's much discussed attitude toward diphtheria carriers in the past. Thus,

	1915	1916
Percentage of positive from total reported	77.63	69.51
Mortality per cent of positive cases	38.98	26.31
Percentage of positive carriers	9.64	5.09

In addition to these data the fact may be mentioned that according to reliable information a number of the total of 114 positive were pronounced "positive" from a clinical standpoint only, the number of "positive" reported by the Bureau of Science being only 44.

Furthermore, a memorandum from the Bureau of Science (June 16, 1916) to the Director of Health with the results of a test of virulence made with strains of B. Diphtheriae from both cases and carriers, reads partly as follows:

> During the latter part of April and the first two weeks in May many cultures from contacts and suspected carriers were being examined daily but very few were positive. Up to the present time 1 strain of B. diphtheriae from a case of disease so diagnosticated clinically and four strains from "carriers" have been recovered in pure culture and tested for virulence, as follows:
>
> Grown on Loeffler's blood serum for 48 hours at 37° then in 2 per cent peptone bouillon for 48 hours after which 2.0 cc. of the culture were injected subcutaneously in 250–300 grams guinea pigs.
>
> The animals were kept under observation for one week and then chloroformed. Careful autopsies were made, the adrenals and kidneys being

especially examined. Cultures were made from these and in addition the heart blood, with negative results in every instance. The organisms were typical in morphology, staining and cultural reactions but were lacking in virulence.

DIPHTHERIA CARRIERS.

The survey of carriers during 1916 shows the following figures:

Health districts.	Schools.		Private households.		Total.	
	Number of swabs taken.	Positive.	Number of swabs taken.	Positive.	Number.	Positive.
No. 1, Intramuros	514	22	486	45	1,000	67
No. 2, Meisic			400	18	400	18
No. 4, Sampaloc			925	33	925	33
Na. 5, Tondo	189	1	254	14	443	15
No. 6, Paco	104		209	24	313	24
Total	807	23	2,274	134	3,081	157
Percentages		2.85		5.89		5.09

These percentages of diphtheria carriers compared with those of 1915 (October, November, and December) as follows:

	1915	1916
Schools	10.51	2.85
Households	7.67	5.89
Average	9.64	5.09

It seems, therefore, that from the available data to which the attention of the reader has just been drawn, the following conclusions are more than fully justified:

1. The large increase in the number of diphtheria cases reported and disposed of during 1916 does not necessarily represent a really increased incidence of the disease; but may merely be a beneficial result of a better understanding on the part of the profession in regard to the great importance attached by the Service to prompt report, confirmation of diagnosis, and immediate use of antitoxin in even doubtful cases of diphtheria. The conduct of these private physicians in so coöperating cannot be too highly commended.
2. From the epidemiological viewpoint diphtheria infection in the city of Manila showed, during 1916, a marked improvement in that:

    (*a*) Percentage of positive out of all cases reported.
    (*b*) Mortality per cent of positive cases.
    (*c*) Percentage of positive carriers (both schools and households).
    (*d*) The virulence of the local strains of Diphtheria B. (cases and carriers).

    } All greatly reduced.
3. The advisability of an antidiphtheria campaign, as undertaken by the Service in 1915, has now the sanction of experience.

MEASLES.

Measles has been prevalent in the city of Manila showing the large incidence of 310 cases though with an exceedingly slight mortality, only 4 deaths from this cause during the whole year.

Even, however, in those 4 cases the deaths could not be charged to any particular severity of the disease, but is accounted for by pulmonary complications to which ill-nourished children are, as a rule, especially predisposed.

The distribution of cases and deaths by months is as follows:

Months.	Measles.	
	Cases.	Deaths.
Jauuary	76	
February	57	
March	70	2
April	39	
May	24	
June	12	
July	6	
August	10	1
September	6	
October	4	1
November	3	
December	3	
Total	310	4

The coexistence of measles and of diphtheria-carrying has been demonstrated in 24 cases out of a total of 289 swabs taken from measles patients.

The distribution by city districts has been thus:

Health districts.	Total.	Filipinos.	Americans.	From schools.	From private households.	Total diphtheria carriers reported by B. of S.
No. 1, Intramuros	87	56	31	31	56	10
No. 2, Meisic	40	32	8	3	37	1
No. 4, Sampaloc	57	40	17	14	43	6
No. 5, Tondo	55	48	7	9	46	3
No. 6, Paco	50	20	30	13	37	4
Total	289	196	93	70	219	24
Percentage						8.30

SMALLPOX, VARIOLOID, AND VARICELLA.

The following is a tabulated report of the incidence of these infections during 1916:

Months.	Smallpox.		Varioloid.		Varicella.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
January			6			
February	1	1	4		7	
March			14		8	
April			13		5	
May			4		4	
June			7		2	
July			4		2	
August			2		1	
September			2			
October			1		6	
November			1		19	
December			4		2	
Total	1	1	62		56	

For the first time in years a death from smallpox was registered on March 1, the victim being an adult by name B. de la P., 40 years old, male, Filipino, driver, with residence at No. 917 Calle R. Hidalgo. The patient was first seen by a municipal physician of Station No. 4, Sampaloc, who examined the patient and made the diagnosis as "Phlegmonous angina" to which, he later stated, there was added a vesicular eruption confined to the chest. The patient was sick for a period of five days, and then died at San Lazaro Hospital where the physician in charge, made a rather late diagnosis of "Hemorrhagic smallpox." The patient was not vaccinated within the last three years.

Assuming that this diagnosis was correctly established, there is nothing in the case that could give rise to well-grounded alarm. Hemorrhagic smallpox is not a particularly severe form of smallpox, but rather a serious and complex condition which results from the occurrence of even a mild case of smallpox in specially predisposed individuals with some unrecognized constitutional defect in the blood similar to the condition known as "purpura."

Concerning the respective prevalence of varioloid and varicella at present, the difficulties usually attached to a correct differential diagnosis between the two diseases make such a diagnosis not infrequently arbitrary and therefore more or less inaccurate.

At any rate, the steadily increasing occurrence of cases of varioloid as shown by the preceding table and compared with the figure of 1915 which amounted to only 3 cases for the whole year, affords good ground for the suspicion at least that the strength of the immunity conferred by the systematic and extensive vaccinations carried out over ten years ago is beginning to wear out and suggests the necessity of a thorough revaccination of the whole community.

The circumstances seem to demand a temporary stoppage of the present method of vaccinating only unprotected persons, and that a general immunization of the city population regardless of any previous vaccination over two years old, be resumed.

Vaccination during 1916.

Health districts.	Vaccinations.	Inspections.	Positive.	Negative.
No. 1, Intramuros	4,546	2,633	1,392	1,241
No. 2, Meisic	14,432	------	------	------
No. 4, Sampaloc	8,755	4,349	1,682	2,667
No. 5, Tondo	11,953	5,256	2,469	2,787
No. 6, Paco	16,287	741	325	416
Total	55,973	12,979	5,868	7,111

HYDROPHOBIA.

For the first time, and following a proclamation issued by the Director of the Service and approved by the Honorable the Secretary of the Interior, March 30, 1916, it was possible to start a systematic work of survey and eradication of the disease both in animals and human beings.

As a preliminary step it was found proper to issue a set of instructions embodied in a circular of the Service which reads as follows:

PHILIPPINE HEALTH SERVICE,
Manila, March 31, 1916.

Circular
O–34

To all medical officers in charge of city health districts.

A notice having been published by the Director of Health with the approval of the Honorable the Secretary of the Interior, on March 30, 1916 (copy attached), concerning the prevention of the transmission and spread of rabies in the city of Manila and corresponding regulations therefor, the following instructions are given for the information and guidance of all concerned:

I. The police force of the city of Manila will have the entire control of enforcing the provisions of such notice. This notwithstanding, the officers and employees of the Philippine Health Service are directed to assist and coöperate with the Manila police force in any possible way as regards information and request for prompt executive action found advisable especially in all cases in which human beings are actually or supposedly affected, viz, persons bitten by mad or suspected dogs.

II. In handling cases of this nature, any person bitten by a dog will be considered a suspicious case of human rabid infection until full evidence to the contrary is satisfactorily shown.

III. Whenever a person is reported to have been bitten by a dog, the first step to be taken is to locate the dog and then hold it in observation in the San Lazaro School of Veterinary Science pending report.

A tag containing data for identification of the dog will be securely attached around the neck. The required data are as follows:

Health District No. ....
Date ....
Name of the dog (if any) ....
Sex .... Color .... Breed ....
Residence ....
Where found ....
No. and date of license ....
Name and address of owner ....

Moreover, the printed form used for "Miscellaneous examination" (copy attached) with the the data contained in the identification tag will be sent in duplicate with the dog to be examined, and after the examination is completed one copy will be returned to the Philippine Health Service with the findings and signature of the pathologist. In addition to this, telephone message may be sent in case of emergency.

IV. When the health officer succeeds in getting a dog alive an observation of about 10 days will be sufficient to give a report of "negative for rabies" provided that during such period no symptoms have developed and the dog remains alive. When on account of vicious habits or for other reasons a suspected dog cannot be caught alive and it becomes necessary to kill it, instructions should be given to policeman dealing with the case to avoid shooting the dog in any part of the body where the central nervous system may be injured. Postmortem examination will be made by the San Lazaro School of Veterinary Science and report rendered at once to the health station from which the dead dog was sent. Dogs and other susceptible animals reported to have been bitten by the mad or suspicious dog will be subject to the same quarantine for such observation as is prescribed for suspicious dogs.

V. Following a thorough investigation as to persons and animals bitten by a supposedly mad dog together with the collection of all interesting statistical data, comes proper disposition of persons bitten, immediately upon receipt of a "Negri bodies positive" report. People who have been bitten by a mad or suspected dog shall be promptly notified of the result of the examination, the fact being emphasized and insisted on repeatedly of the necessity for them to undergo the antirabic prophylactic injections in the Bureau of Science or other properly equipped institution, as otherwise their lives will be seriously endangered by their contracting the disease. No less than 21 serial injections are usually required.

VI. As rabies is generally only transmitted by direct inoculation through the dog's bite, no process of isolation, quarantine, or disinfection will be instituted for human cases.

J. D. LONG,
Director of Health.

Concurred in:
ALVIN J. COX,
Director of Science.
W. H. BOYNTON,
Dean, College Veterinary Science.
GEORGE SEAVER,
Chief of Police.

A numerical report of the incidence of rabies both in dogs and in persons with a distribution by districts, during 1916, follows:

Health districts.	Number of suspected dogs examined.		Number of persons bitten by suspected dogs.	
	Examined.	Found positive.	Persons bitten.	Contracted the disease.
No. 1, Intramuros	19	2	11	----------
No. 2, Meisic	13	4	5	----------
No. 4, Sampaloc	19	3	16	----------
No. 5, Tondo	8	----------	9	[a]1
No. 6, Paco	13	2	----------	----------
Total	72	11	41	1
Percentage of positive	----------	15.27	----------	2.43

[a] Biting dog (positive) died 1915; bitten person died February 27, 1916.

We have thus been able to draw some provisional conclusions as follows:

1. Rabid infection (among dogs) prevails in Manila, at least to an extent equivalent to 1.27 per 100 of the *suspected* dogs.

2. It is a most gratifying result that out of 41 persons bitten by suspicious dogs, not more than one contracted hydrophobia.
3. This satisfactory result has been due almost exclusively to a most emphatic action on the part of health officials inducing bitten people to undergo the prophylactic inoculation.
4. Perhaps, a muzzling ordinance would be of more immediate effect in promoting a more active attitude of the city authorities toward the enforcement of the proclamation.

The single case of human rabies reported in the table can in no way be accounted as a failure of the antirabid vaccination as a full history of the case shows that it is not through any fault traceable to the method that the unfortunate event was brought about.

The facts in the case were as follows:

On December 15, 1915, a girl by name L. de los S., 16 years old, Filipina, living at 970 Calle Ilaya, was bitten by a supposedly rabid dog belonging to the same household. Action was immediately taken by sending the dog alive to the College of Veterinary Science, University of the Philippines, and therein placed under the close and careful observation of Doctor Boynton. The dog having died on December 17, the brain was examined and Negri bodies found. L. de los S. was at once notified by the medical officer in charge of Health District No. 5 of such result, it having been emphasized and insisted upon that she should without delay proceed to the Bureau of Science and receive antirabic treatment for a number of days from Dr. Ruediger, in charge of the sera and vaccine laboratory. Three injections in three consecutive days (December 18, 19, and 20) were administered to the girl by Dr. Ruediger (a treatment entirely inadequate as 21 injections are generally required), and then the girl for some reason or other stopped her visits to the Bureau of Science. From December 21 to February 23 (a period of 62 days) everything went well but on February 24 she began to feel the first symptoms of the disease and at last died at 7 p. m. of February 27. Dr. Isidoro de Santos who attended the case, issued the death certificate with diagnosis of "Hydrophobia."

PLAGUE AND PLAGUE SUPPRESSION WORK.

Except in so far as indicated by a plague rat discovered on July 31, 1916, at No. 1226 Juan Luna, out of 64,944 examined by the Bureau of Science, it may safely be stated that the year has been one absolutely clean as regards plague infection.

This rodent plague case aroused considerable alarm at first owing to the fact that the premises concerned (No. 1226 Juan Luna) had had a somewhat dark history on account of two previous human cases of plague found on May 14 and 15, 1913, among its occupants.

Most fortunately, however, upon examination of the plague rat by the Bureau of Science, the case was pronounced:

"Positive for plague, chronic type, not virulent."

This notwithstanding, rat-campaign operations continued to be conducted throughout the year with undiminished strength and energy, as may be seen below:

Number of spring traps set	369,336
Number of wire traps set	11,917
Number and kind of bait set (coconuts)	381,358
Number of poison portions placed	776,919
Number of rats caught with spring traps	58,063
Number of rats caught with wire traps	96
Number of rats caught by dogs	42
Number of rats found poisoned	3,035
Number of rats killed by clubs and other weapons	7,576
Number of rats found dead from other causes	920
Total number of rats caught or killed	69,732

Rat-proofing orders.

Orders issued	119
Orders suspended	1
Orders completed	81
Orders awaiting action	37

Cleaning orders.

Orders issued	616
Orders completed	606
Orders awaiting action	10

MOSQUITO AND FLY EXTERMINATION.

Report on antimosquito work.

Houses inspected during year	140,330
Houses where breeding places were found	15,907
Number of breeding places found in houses	17,008
Vessels ordered emptied or removed	13,272
Drains ordered cleaned	18,691
Lineal feet of drains ordered dug	3,162
Square feet of grass ordered cut	889
Breeding places on private premises oiled	91,859
Breeding places on public property oiled	121,571
Water receptacles overturned	11,616
Cans of crude oil used (5-gallons)	5,097
Sanitary orders issued (including filling orders)	2,616
Insanitary conditions reported to health stations	279
Complaints attended	282
Fines imposed:	
1 at ₱38	₱38
6 at ₱15 each	90

Report on antimosquito work—Continued.

6	at ₱10 each	₱60
2	at ₱8 each	16
2	at ₱6 each	12
18	at ₱5 each	90
31	at ₱3 each	93
11	at ₱2 each	22
77	Total	421
	Average	5.47

Fly inspector's report:

Stables inspected	4,845
Stables ordered cleaned	1,568
Stables cleaned	1,307
Cans of oil used on city garbage fills	396

REMARKS.

For nearly two months during 1916 the whole force of mosquito and fly men were detailed for anticholera and clean-up work.

A number of large areas were filled during the year, in compliance with sanitary filling orders, including most of the ditches and water holes south of calle Herran on Taft Avenue, also several water holes and part of a swamp north of Calle Herran on Taft Avenue. A large swamp on M. de Comillas and a swamp east of Malacañang Palace on Uli-Uli. In adition to these a large number of smaller areas were filled.

The following table shows the city mortality for malaria during a period of 16 years, a very significant demonstration of the value of the antimosquito campaign in the reduction of the prevalence of malaria in the city of Manila:

Quinine period.

Years.	Deaths.
1901	310
1902	352
1903	262
1904	166
1905	177
1906	220
1907	164
1908	177
1909	118
Antimosquito period.	
1910	122
1911	103
1912	91
1913	75
1914	53
1915	51
1916	56

Disinfections in the city of Manila during the year 1916.

Cholera	2,044
Diphtheria	199
Dysentery	3
Glanders (suspected)	3
Insanitary conditions (miscellaneous)	85,612
Leprosy	69
Measles	224
Mumps	24
Plague (suspected)	3
Puerperal septichaemia	2
Rinderpest (carabao)	1
Rubeola	1
Smallpox and varioloid	44
Tuberculosis	397
Typhoid and paratyphoid	135
Varicella	27
Whooping cough	2
Total	88,790

LICENSED BUSINESSES.

The activities of the division as regards "licensed businesses" are shown in the following:

Report of action taken on application for licenses, during the fiscal year 1916.

Kind of license applied for.	Approved.	Disapproved.	Total acted upon.
Liquor:			
First-class bars	61		61
Second-class bars	18	4	22
First-class bars and restaurants	68	4	72
Second-class bars and restaurants	18	1	19
Groceries, retail	83		83
Groceries wholesale	37		37
Druggists	10		10
Theatres	7		7
Hotels	30	1	31
Restaurants	569	47	616
Lodging houses	5		5
Boarding houses	77	16	93
Native wines	2,747	69	2,816
Cooked foods, fruits, vegetables, soft drinks and bakery products	2,718	137	2,855
Second-hand articles	151	2	153
Barber shops	487	21	508
Barber shops, additional chairs	35	2	37
Laundries	86	8	94
Public vehicles	579	51	630
Billiard and pool tables	114	5	119
Dyeing and cleaning establishments	26	1	27
Livery stables	42	2	44
Manufactories	326	16	342
Grocery stores	94	1	95
Bicycle hiring establishments	35		35
Boil and sell lard	24		24
Additional automobiles (licensed garages)	3		3
Bakeries	32	2	34
Clubs	49	1	50
Boarding stables	6		6
Distilleries	15		15
Horseshoeing establishments	38	4	42
Theatres and cinematographs	36		36
Ice cream and iced mongo parlors	89	5	94
Conbustible materials warehouses	50		50
Sugar warehouses	30		30
Pawnbrokers	42		42
Drying establishments	9		9
Tattooers	7		7

Report of action taken on application for licenses, during the fiscal year 1916—Continued.

Kind of license applied for.	Approved.	Dissapproved.	Total acted upon.
Drying and selling fish	17	1	18
White taju (a kind of Chinese refreshments)	15	1	16
Blacksmith shops	79	3	82
Foundries	17	1	18
Junk shops	26	4	30
Permit to sell vinegar	1		1
Circuses	2		2
Auctioneers	5		5
Garages	26	1	27
Offices garages	3		3
Dance halls	4	1	5
Advertising agencies	1		1
Forges	15		15
Tallow, rendering and sale	1		1
Stock yards	4	1	5
Tanneries	9		9
Electrical installations	1		1
Dairies	8	1	9
Fruit canning and pressing	1		1
Breweries	2		2
Embalmers	4		4
Master plumbers	2		2
Undertakers	10		10
Race tracks	1		1
Total	9,107	414	9,521

SUPERVISION OF WATER SUPPLIES.

Owing to the so far uncontrolled prevalence of diseases of gastro-intestinal origin in this country, a large portion of the activities of the Division has been directed all through the year to a continuous and tireless supervision of the drinking water furnished in public institutions and business places of the city of Manila. Of course, much of the problem involved depends largely on a higher degree of education among the lower classes of the people, and while such an accomplishment requires time and patience to obtain, yet some improvement may be shown as attained during this year (1916) as compared with the previous one (1915).

The general 1916 survey shows the following results:

Health stations.	Samples examined.	Bacterial count.			Positive for—					Samples unfit for drinking.	Percentage unfit for drinking.
		10,000 and over.	100,000 and over.	1,000,000 and over.	Presumptive test.	Baccillus coli.	Amœba.	Flagellates.	Cyliates.		
No. 1, Intramuros	333	218	115		110	104	18	18		110	33.03
No. 2, Meisic	615	504	111		212	212	77	213	88	212	34.47
No. 4, Sampaloc	426	275	151		164	149	2	3		164	38.50
No. 5, Tondo	749	412	337		355	286	123	345	133	355	47.4
No. 6, Paco	89	66	21	2	29	27	6	2	2	29	32.57
Total	2,212	1,475	735	2	870	778	226	581	223	870	39.33

NOTE.—These samples of water were taken from the following public establishments and schools:

1. Bar.
2. Hotels.
3. Lodging houses.
4. Restaurants.
5. Saloons.
6. Schools (private).
7. Schools (public).
8. Soda factories.
9. Tiendas.
10. Other public places.

Fines imposed:

District No. 1	₱165.00
District No. 2	234.00
District No. 4	125.00
District No. 5	54.00
District No. 6	0.00
Total	578.00

A comparison of these figures with those for 1915 would be as follows:

	1915	1916
Number of sample examined	804	2212
Samples found unfit for drinking	390	870
Percentage unfit for drinking	48.50	39.33

NUISANCES AND THEIR ABATEMENT.

"Nuisance" has always been a subject of the highest importance in any work of sanitation. Especially in tropical countries where popular communities are merely beginning to understand the advantage of keeping a higher and higher standard of life, by the elimination, as thoroughly and quickly as possible, of any cause or condition which does or may prove productive of disease, distinct discomfort or slight unpleasantness, the abatement of nuisances has much of an educative character and almost marvelously contributes to bringing about a higher type of living methods. It has been, in consequence, the policy of the division to endeavor to promptly attend to, and provide means for the abatement of, any nuisance reported either officially or informally through even anonymous calls by telephone. The public support is thus gradually obtained by creating the impression that their reports are given due credit and immediate relief.

As, on the other hand, the kind of orders needed for the abatement of nuisances are in most of the cases of not great moment and were, as a rule, served verbally, compliance with them was with difficulty attainable for lack of evidence in case court action became necessary. The idea thus grew up of doing away with verbal orders of any description and a new class especially termed "minor orders" (in writing) was established instead, in accordance with the following instructions:

PHILIPPINE HEALTH SERVICE,
Manila, April 11, 1916.

Circular }
O–39 }

To all medical officers in charge of city health districts.

For the purpose of preventing in the future, waste of time and effort due to lack of evidence in any case of prosecution for noncompliance with verbal sanitary orders concerning minor nonstructural defects found in the inspections of houses, buildings, and structures of whatever description (most of which are but the result of faulty maintenance thereof), medical officers and employees of the Philippine Health Service on duty in the city of Manila are hereby directed to use hereafter the new order book (a number of which are sent herewith) for orders of the kind that were heretofore issued and served *verbally*.

The rules for the purpose of the order book are as follows:

I. Orders are to be made out in duplicate. After signature, the white copy will be detached and delivered to the occupant of the premises or his or her representative, and the yellow (carbon) copy retained in the book for further reference.

II. The specifications of the order (usually the abatement of a nuisance needing no structural remedy) will be clearly stated in English, Spanish, Tagalog, or other Filipino dialect, care being exercised that each different item be numbered separately as follows, by way of illustration:

1. Clean kitchen and yard.
2. Provide better accomodation for pigs, or remove them from premises.

III. In filling the blank spaces of the order special attention should be paid to:

(*a*) A clear specification of the repair desired.
(*b*) A reasonable length of time for compliance.
(*c*) The signature of the person receiving the order.

Moreover, when a second order is served, it should contain exactly the same specifications as the former one, and the fact of being a *second order* will be so stated on both white and yellow copies.

IV. The reverse side of the retained copy will be reserved for notation of the results of the order as found on reinspection of the premises, and should contain the following information:

(*a*) In case the order has been satisfactorily complied with it will be marked *completed* followed by the date of reinspection and signature of the inspector. Orders *but partly* complied with will be regarded, and disposed of, as provided for in the next paragraph.

(*b*) In case of noncompliance, or partial compliance only, the retained copy will be so marked, and a *second* order issued, this fact to be noted on the reverse side of the first and on the front of the *second* order.

(*c*) In no case will a third order be served for the same defect. Two consecutive orders not satisfactorily complied with should cause the case to be referred to the prosecuting attorney for the necessary action.

(*d*) The result of the trial, or appeal, as the case may be, will be noted (fined ₱..........; or .... days imprisonment; or *dismissed* or *acquitted*), as well as the date of the sentence and signature of the inspector.

V. At the end of each month a numerical report will be submitted by each health station with a summary as follows:

Total number of *first minor orders* issued ....
No. of *first minor orders* complied with ....
No. of *second minor orders* issued ....
No. of *second minor orders* complied with ....
Total number of prosecutions ....
No. of cases fined ....
Total amount of fines ....
No. of cases in which imprisonment was imposed ....
No. of cases dismissed or acquitted ....

(Sgd.) J. D. LONG,
Director of Health.

The "minor order" above referred to is as follows:

PHILIPPINE HEALTH SERVICE.

District No. .... Manila, P. I., ..., 191
Sanitary order to
Mr. ....
Occupant of the premises No. ...., Calle ....
Sir:
Madam:

The insanitary condition found on this date at your premises makes it my duty to request you to comply with the provisions of section 667 and 668 of the Revised Ordinances, as follows:

....
....
....

Within .... { days / hrs. } from date.

By authority of the Director of Health:

....
Assistant Sanitary Inspector.

Copy received on above date.

....
[Occupant of the premises.]

NOTE.—This order for minor nonstructural repairs is not to be mailed; serve it at once on the occupant or representative.

The further outcome of the measure during 1916 may be summarized as follows:

Action on minor orders.	District No.—					Grand total.
	1.	2.	4.	5.	6.	
Total number of first minor orders issued	249	1,082	177	369	183	2,060
Number of first minor orders complied with	230	952	177	265	172	1,796
Number of second minor orders issued	19	130		104	11	264
Number of second minor orders complied with	19	129		104	11	263
Total number of prosecutions		1				1
Number of cases fined		1				1
Total amount of fines		₱10				₱10
Number of cases in which imprisonment was imposed						
Number of cases dismissed or acquitted						

As regards regular orders (station orders, orders for garbage cans, and recommendations for sewer connection), the following table shows the activities of the Division during 1916:

Health districts.	Garbage can orders.	Station orders or miscellaneous.	Recommendation for sewer connection.
No. 1, Intramuros	434	81	16
No. 2, Meisic	480	117	141
No. 4, Sampaloc	404	113	8
No. 5, Tondo	157	649	3
No. 6, Paco	27	114	1
Totals	1,502	1,074	169

Finally, the "1916 clean-up-week," a matter so closely related to the systematic and thorough abatement of nuisances gives the following results:

Health districts.	Places found insanitary.				Insanitary conditions corrected.				Employees.	Days spent.
	A.	B.	C.	D.	A.	B.	C.	D.		
No. 1, Intramuros	620	287	297	1,688	310	281	274	1,688	10	15
No. 2, Meisic	1,190	618	472	2,859	1,190	618	472	2,859	15	14
No. 4, Sampaloc	284	44	106	1,804	209	9	70	1,552	6	16
No. 5, Tondo	9,593	7,300	1,298	5,985	7,128	7,223	1,292	5,949	18	8
No. 6, Paco	84	120	10	225	84	120	10	225	4	7
Mosquito and rat extermination force	2,160	3,436	3,462	4,082	2,079	3,436	3,285	4,048	28	12
Total	13,331	11,805	5,645	16,643	11,000	11,687	5,303	16,321	81	72

(A) Improper handling of drinking water.
(B) Mosquito breeding places.
(C) Domestic animals.
(D) General cleaning.

MEDICAL INSPECTION OF MANILA PUBLIC SCHOOLS, 1916.

The medical inspection of Manila public schools, which was begun in 1910 in an effort to prevent the spread of diphtheria, has until this time been conducted wholly by representatives of the Philippine Health Service.

For several years this inspection was carried on more or less intermittently as the personnel could be spared from other urgent duties, the efforts being confined chiefly to the detection of dangerous communicable diseases and the prevention of epidemics. Nevertheless its value and necessity have been so obvious that each year has evoked an increasing interest in it and demands for its extension to include other remediable conditions.

In view of the generous provision for the appointment of four school nurses, made in the 1917 budget for Manila city schools, it seems opportune to present a schedule of the various directions in which such inspection should continue or be extended as increased personnel becomes available.

Such a tentative plan is indicated below.

Schedule of medical inspection of Manila public schools.

1. Isolation of dangerous communicable diseases:
   - Includes the following diseases—
     - Smallpox or varioloid.
     - Varicella.
     - Measles.
     - Diphtheria (including mild or atypical cases and carriers).
     - Whooping cough.
     - Mumps.
     - Tuberculosis (with open lesions).
     - Other dangerous communicable diseases.
   - To be accomplished by—
     - (*a*) An inspection by a physician every month.
     - (*b*) Instruction of teachers in the detection of the early symptoms, with special emphasis upon such disease as may become epidemic or prevalent at any time.
     - (*c*) Periodical inspection by the school nurses.
     - (*d*) The employment of Philippine Health Service physicians, nurses, and sanitary inspectors whenever conditions require a more rapid survey.
2. Contagious eye conditions (to be excluded until cured):
   - Trachoma.
   - Acute contagious conjuctivitis.
     - These conditions while dangerous to health are not fatal and therefore are not subject to compulsory isolation or control by the Philippine Health Service, but should be excluded from the public schools for the protection of the other students.
   - (*a*) To be treated by private physicians or at free dispensaries.
3. Skin parasitic diseases (to be excluded until cured):
   - Scabiosis.
   - Pediculosis.
   - Favus.
     - These likewise while not dangerous to life should be excluded from school until cured.
   - (*a*) To be given treatment at free dispensaries unless able to secure private physicians.
4. Noncontagious conditions:
   - Not to be excluded from school but recommended to secure treatment.
   - Certain of these conditions require special consideration in order that they may secure the best results from their attendance at school, while others may require special consideration for the protection of their own health, as in cases of heart disease or latent tuberculosis.
   - (*a*) Such conditions are recorded for comparative statistical purposes and for instruction in hygiene.
   - Under this division the following conditions are reported—
     - Myopia.
     - Other noncontagious eye conditions.
     - Adenoids.

Tonsils hypertrophied.
Dental caries.
Defects of hearing.
Discharge from one ear.
Discharge from both ears.
Adenitis, tubercular.
Tinea.
Pediculosis, without living pediculi.
Bodily deformities.
Mental defects.
Delayed development.
Other diseases, to be specified.
Absence of vaccination (to be vaccinated at once).

(*b*) The school nurses and physicians will treat such of the above conditions as appear amenable to available treatment, with the consent of the student's parents.

5. Sanitary inspection of school buildings (to include):
   (*a*) Light.
   (*b*) Ventilation.
   (*c*) Toilet facilities.
   (*d*) Drinking water.
   (*e*) Preparation of lunches.
   (*f*) General conditions of environment which might affect students adversely.
   (*g*) Extension of sanitary inspection to the homes of the children whose condition indicates faulty home hygiene.

   This is a particularly promising field for the school nurses whose acquaintance with the children at the schools places them in a most favorable position to conduct this home inspection and to give necessary instruction in hygiene.
6. School clinics:

   Such clinics are now being conducted at certain school buildings and at the various stations of the Philippine Health Service.
7. Compilation of records of physical condition as compared with progress in school:

   This is desirable to show the increased cost of instruction demanded by certain physical conditions and may prove the desirability of a special school for backward or defective students.
8. Tabulation of statistics of communicable diseases by rooms and schools to indicate the influence of school association upon the spread of disease.
9. Compilation of statistics for the establishment of mental standards for the Philippines.

   This will be of assistance in the future in determining mental deficiency.
10. Special medical inspections, as emergency conditions may arise.
11. Object lessons in the cause and prevention of disease.

    This might well be carried on in the intermediate schools by practical demonstrations of the growth of disease organisms on Petri dishes, and the growth of insects.
12. Vaccination against variola.

Owing to force of circumstance the report of the division of school inspection for the year 1916 must be largely a consideration of trachoma, a subject which singularly enough, like the general subject of medical inspection of schools is occupying much attention in the United States at the present time.

The subject of school inspection received its first real impetus in the Philippines in 1910 when it was found through a partial examination of the schools that about one per cent of the children had trachoma.

During the succeeding five years all the city schools of Manila were carefully inspected twice a year. In the school year 1911–1912, 305 cases were found among ten thousand students or 3 per cent. As all these cases were referred for treatment the year 1912–1913 showed a decreased per centage, 284 of the 24,665 examined having trachoma or $1\frac{1}{10}$ per cent, while in the succeeding year 1913–1914 the number of cases were still further decreased to 91 among 35,171 children or $\frac{3}{10}$ per cent. At this time reports from the provinces showed that 10 per cent of the children had trachoma.

The year 1915 saw the abolition of the school clinic, an institution which has been found most successful wherever tried and more especially so in the Philippines where several thousand children received treatment each year. This year also showed a slight increase in trachoma, 117 cases among 25,747 children inspected, or $\frac{2}{5}$ per cent.

The year 1916, however, has shown a big increase in trachoma, one school only being found entirely free from the disease, while in the other schools from 1 to $10\frac{1}{2}$ per cent of the children were affected with trachoma.

In addition to the trachoma there have been two slight epidemics of Koch Weeks infection.

To combat this condition the schools were inspected as rapidly as possible, all children affected being excluded, and six school clinics established, one at each of the health stations and one at Tondo Intermediate School. Some idea of the amount of work done may be gained from the following table:

Health stations.	August.		September.		October.		November.	
	Treated.	Cured.	Treated.	Cured.	Treated.	Cured.	Treated.	Cured.
No. 1, Intramuros	2,611	--------	4,149	209	1,741	133	882	30
No. 2, Meisic	1,398	36	859	--------	910	24	2,147	4
No. 4, Sampaloc	489	--------	427	--------	389	--------	357	--------
No. 5, Tondo	377	--------	411	--------	410	--------	366	--------
No. 6, Paco	138	--------	114	--------	159	--------	132	--------
Tondo Intermediate School	1,450	--------	--------	--------	1,331	--------	1,340	--------
Total	6,463	36	5,960	209	4,934	157	5,224	34

As most of these cases of trachoma begin insidiously and the unfortunate victim is quite unconscious of his condition until a routine examination reveals it, regular and systematic inspection of the school children is essential.

As no hospital in the city of Manila will accept trachoma cases it has been necessary to limit the treatment to the medical treatment which could be given in the health stations. The copper sulphate pencil has proved a sure cure, though slow and exceedingly painful. A few cures have been effected by radical treatment, operating upon one eye at a time, so that the patients may return to their homes, thus avoiding the necessity for hospitalization. The number of operations will be increased during the next few months as others affected note the results of operation.

The general consensus of opinion among those who have studied trachoma is that it is slowly but surely contagious and as an inquiry into the history of the Manila school children usually discloses the fact that two or three children of school age affected with trachoma are to be found in one family, and in many instances these children are attending as many differrent schools in the city it is easy to see how the disease may be rapidly spread.

It is a matter of congratulation that most of the cases found seem to have developed within the last ten months and that so far, pannus and blindness, the dread sequelae of trachoma are rare and, as several hundred children have been discharged cured and those under treatment are improving, it seems probable that the epidemic will leave no untoward results.

Since trachoma means exclusion from school for several months which is unsatisfactory for teachers and children alike, arrangements have been made to examine all new students before they are allowed to matriculate at the beginning of the school year and also to examine all provincial students asking for transfer to the city schools during the year.

Another measure which is desirable is one modeled after the methods employed in Kentucky where a great many trachoma cases have been found. In Kentucky, trachoma hospitals have been established. In Manila we wish to establish a trachoma school, which the trachomatous children should attend for one year and which should have a properly equipped dispensary with attending physician and nurses.

In order to safeguard the health of teachers and pupils it is recommended that all school teachers should be a valuable aid in the efforts to make the schools the center of instruction in hygiene.

There are many improvements desirable in the school buildings now in use but realizing that at the present only such recommendations are desired as can be carried out with little or no expenditure, the following suggestions are made.

In Intramuros Primary School, Calle Beaterio, rooms now numbered 12 and 13 are probably the most unsatisfactory in that school on account of lack of light, ventilation, and air space per pupil. The vacant room to the right on entering has larger windows, more height from floor to ceiling and has openings both exteriorly and toward the courtyard giving through ventilation and it is therefore more desirable than the classrooms now numbered 12 and 13.

In the Zurbaran School, the use of the space beneath the main floor is unsatisfactory from a sanitary standpoint since the height from floor to the ceiling is but 7 feet, less than the law permits for any licensed business, while in this case nearly 120 children are not only in a limited space, but as there are no windows but merely openings direcly into the street, barred with strips of wood, there is insufficient light, while at times the dust is a menace to health. When the sun is on this side of the building or the rain comes from this side some pupils are without protection from either sun or rain.

In the San Lazaro School several of the rooms were intended for a blacksmith shop and have insufficient light and ventilation for the number of pupils who occupy them, especially during rainy weather when it is necessary to close the doors.

It does not seem right to use space for school purposes which is not fitted for that purpose and which would not be permitted to be used for business purposes since such a course might lead the owners of rented buildings to expect higher rentals for school purposes than the buildings would produce for other purposes.

Referring to the accompanying tabulated report of the defects found during the year 1916, through the medical examination of the public-school students of Manila, it is desired to call attention to the fact that only three cases of dangerous communicable disease were found, namely three cases of mumps. These were the only cases which would have required the attention of the Philippine Health Service for the purpose of isolation.

There were 1,918 cases excluded from school on account of trachoma, acute conjunctivitis, scabiosis, living pediculi and other contagious skin diseases. While many of these were treated and cured within a week the majority required a longer period of treatment. Moreover since they are usually infected by others at home, it is very important that they receive instruction in hygiene and the prevention of infectious diseases not only that they may avoid future infection but that they may instruct the others of their family in the treatment and prophylaxis of the disease from which they are suffering. It is for this purpose that the suggestion is made that a special school be designated for these defective pupils where they may not only receive treatment but instruction in personal hygiene and the prevention of infection. I believe this would prove of the greatest assistance in the elimination of these debilitating conditions because we find almost invariably that *infectious diseases in school students are an index of conditions throughout the city.* We have found usually that there were other cases in the homes or residences whenever we have had the opportunity of investigating this matter personally. It is evident therefore, that these students should not be kept from schools but rather that they should be taught the proper treatment and hygiene of preventive medicine in order that they may assist in the elimination of such conditions. Moreover through them it is possible to find the foci of infection much more readily than by a house to house inspection, while, it is practically useless to treat a student without treating the other similar infectious chronic diseases in a household, unless such a student may be taught and enforce prophylactic measures.

It is desired to explain that the enumeration of cases of pediculosis is incomplete since we found that in certain rooms and schools the majority of the pupils harbored living pediculi and to have excluded such cases would have necessitated the closing of the schools. Such a condition is deplorable in view of the danger of transmission of disease and of the debilitating effect of this continual nervous irritation upon young children.

The number of cases of scabiosis also warrants the establishment of a special clinic with sulphur baths and clothing sterilizer.

The 3,092 cases of conjunctivitis found were usually of mild degree but some of them developed into trachoma and we thus have records of the time required for the development of this disease in these instances, as well as the evidence of the difficulty of early diagnosis, and the inefficiency of the usual treatment of conjunctivitis in preventing such development.

It was impossible to determine the actual condition with regard to adenoids except where visually evident, so that the figures given represent severe cases.

Tonsils were reported as hypertrophied only when they were of such size as to evidently decrease the normal lumen of the pharynx. Many of these should be removed while others are doubtless harmless.

The subject of dental caries is apparently not decreasing in importance as indicated by the fact that 12,888 pupils were found with defective teeth. However, there is evidence of increased interest in the matter and since in this report those with a moderate-sized cavity count equally with those with numerous decayed stumps, it is difficult to present a true idea of the actual conditions and the variation from year to year. From personal recollection, however, it is believed that there has been some improvement over the conditions noted in the examination in 1910, though not as much as is desirable, or necessary for the improvement of the health of the people, as a whole.

The determination of tuberculosis without open lesions seems impracticable at present and the figures given are subject to revision.

The cases of mental deficiency and backward development refer to cases found in the Hospicio de San Jose which institution was included in this medical inspection.

SPECIAL INVESTIGATIONS REQUESTED BY THE DIRECTOR OF EDUCATION.

In addition to the routine medical inspection, the medical inspector of schools has been called upon during the past year to investigate and report upon the occurrence of beriberi at the School of Household Industries and advise measures for its elimination and the prevention of further cases.

A report with recommendations was furnished the Director of Education of February 21, 1916, indicating that while the diet and general conditions were satisfactory, the specified diet was not being consumed by all pupils on account of lack of appetite for certain unfamiliar foods on the part of those who were affected with beriberi.

The changes suggested were carried out with satisfactory results since all of the cases recovered rapidly and no subsequent cases have developed.

The efforts on this occasion to secure a palatable grade of rice with sufficient pericarp remaining on it to prevent beriberi indicated that the mills were not marketing such rice. It might not be amiss to suggest here that the Government arrange to maintain a demand for a reasonable quantity of this grade of rice so that rice mills may continue to market it and thus insure its availability to those consumers who desire to purchase it, especially for families in which cases of beriberi have occurred.

In compliance with a request from the Director of Education, dated July 12, 1916, an effort was made to determine the percentage of cases of tuberculosis among public school students and the effect of the required athletics in the school curriculum upon the development of this disease.

This investigation included the examination of some 6,000 public school students and the results included in the report of September 21, 1916, to the Director of Education indicated that but one case of pulmonary tuberculosis was present per thousand students examined, which is considered a very favorable status.

The conclusion is obvious that the present athletic requirements are not dangerous.

Medical examination of public school students of Manila for 1916, and physical defects found.

NUMBER OF DEFECTS BY DISEASES.

Names of Schools.	6	7	21	22	31	32	34	41	42	43	44	45	46	47	48	49	50	51	53	54	55	56	Total.
Tondo Intermediate School		1	183	53	118	23		3	325	7	76	318	1					13				2	1, 123
Gagalangin Public School			87		59																		146
Tondo Public School			26	2	6				50		32	130		1				20				1	268
Zurbaran Public School			7	1																			8
Evangelista Public School			8		3	3																	14
Meisic Public School			108	16	25	20	2	4	53	23	374	542	1				5	42	16	3			1, 234
San Lazaro Public School			8	1	4													1					14
Ermita Public School			44	7	4				109	3	127	474		1				20					789
Soler Public School			26	1	3			4	55	22	123	174		1									409
San Nicolas Public School			145	12	13			1	50		46	961	3										1, 231
Intramuros Public School	1		38	5	8				175	2	103	786	7			4	1	30	2			35	1, 197
Paco Intermediate School		1	114	94	3		3	2	235		3	1, 091		1	1		30	1	1			78	1, 658
Sampaloc Intermediate School			42	20		1			85	12	62	383						1					606
Philippine Normal School	1		18	1	1			3	576	5	18	1, 212	70			2	1	41	2			142	2, 093
Manila High School			13	5				15	354		1	538											926
Sampaloc Public School			42	53			23		93		43	605										5	864
Pandacan Public School			29	4	1				60	13	21	121	15			78	6	46	2			54	450
Malate Public School			29	5					37	2	8	137	27	1		7		30				22	305
Herran Public School			37	3	2			1	77	2	3	884	16	1		4		31	3			40	1, 104
Paco Public School	1		33	1	3			2	183	1	6	1, 457	27	1	1	16		45	1			75	1, 853
Central School			13						15	12	17	11	17	1		2						3	91
Santa Ana Public School			35	9					102	2	4	752	27			4	3	20				37	995
Santa Clara Public School			29	4					107			666						2					808
Commerce School								2	115	1	2	244						2					366
San Sebastian Public School			29						18		74	277											398
Santa Mesa Public School			13						106			683						25					827
Singalong Public School			1	2					15		5	202	24			5		8				29	291
San Andres Public School			75	12	2				58	2	6	148	15			17	1	90				25	451
Hospicio de San Jose			13	9	5				20	2	4	107	3			1	2	23	1	17	4	5	216
Deaf and Blind School			3						25		1	15	31	1									76
Totals	3	2	1, 248	320	260	47	28	37	3, 098	111	1, 159	12, 918	284	9	2	140	49	491	28	20	4	553	20, 811

INDEX NUMBER OF DISEASES.

6. Mumps.
7. Tuberculosis.
21. Trachoma.
22. Acute conjunctivitis.
31. Scabiosis.
32. Pediculosis (live pediculi).
34. Other contagious skin diseases.
41. Myopin.
42. Other eye affections.
43. Adenoids.
44. Tonsils, hypertrophied.
45. Dental caries.
46. Defects of hearing.
47. Discharge from one ear.
48. Discharge from both ears.
49. Adenitis, tubercular.
50. Tuberculosis (without open lesions).
51. Tinea.
53. Bodily deformities.
54. Mental defects.
55. Backward development.
56. Other diseases.

NUMBER OF EXAMINATIONS AND DEFECTS BY MONTHS.

Name of Schools.	January.		February.		March.		April.		May.		June.		July.		August.		September.		October.		November.		December.		Totals.	
	Examined.	Defects.	Examined.	Defects.	Examined.	Defects.	Examined.	Defects.	Examined.	Defects.	Examined.	Defects.	Examined.	Defects.	Examined.	Defects.	Examined.	Defects.	Examined.	Defects.	Examined.	Defects.	Examined.	Defects.	Examined.	Defects.
Tondo Intermediate School					1,316	694					1,810	429													3,126	1,123
Gagalangin Public School			896	146																					896	146
Tondo Public School			939	268																					939	268
Zurbaran Public School					723	8																			723	8
Evangelista Public School					974	14																			974	14
Meisic Public School					2,585	1,234																			2,585	1,234
San Lazaro Public School					654	14																			654	14
Ermita Public School					571	397									438	392									1,009	789
Soler Public School					504	409																			504	409
San Nicolas Public School					1,231	48															1,462	1,183			2,693	1,231
Intramuros Public School					562	374									512	427			491	396					1,565	1,197
Paco Intermediate School											836	668			995	990									1,831	1,658
Sampaloc Intermediate School													627	606											627	606
Philippine Normal School													1,263	1,315							1,349	778			2,612	2,093
Manila High School													1,060	926											1,060	926
Sampaloc Public School															908	864									908	864
Pandacan Public School															408	134					442	316			850	450
Malate Public School															415	59					360	246			775	305
Herran Public School															667	705			389	399					1,056	1,104
Paco Public School															995	990	916	863							1,911	1,853
Central School																	424	91							424	91
Santa Ana Public School															588	523	518	472							1,106	995
Santa Clara Public School																	939	808							939	808
Commerce School																			344	366					344	366
San Sebastian Public School																			622	398					622	398
Santa Mesa Public School																			740	827					740	827
Singalong Public School																			239	291					239	291
San Andres Public School															767	128					732	323			1,499	451
Hospicio de San Jose																					330	216			330	216
Deaf and Blind School																					56	76			56	76
Totals			1,835	414	9,120	3,192					2,646	1,097	2,950	2,847	6,693	5,212	2,797	2,234	2,825	2,677	4,731	3,138			33,597	20,811

REPORT OF THE DIVISION OF SANITATION IN THE PROVINCES.

[Dr. PAUL CLEMENTS, *Chief of Division.*]

Six additional provinces, Batangas, Cagayan, Capiz, Leyte, Tarlac, and Zambales, making sixteen in all, were organized into sanitary divisions early in the year under the provisions of Act No. 2156 as modified by Act No. 2468. One new sanitary division, comprising four municipalities was organized in the province of Misamis; Bohol was redistricted during the year into ten divisions instead of nine, thus giving an improved service, and the municipality of Iloilo, which had previously held aloof, entered the provincial organization under the pressure of a cholera epidemic. In two cases, formerly independent municipalities which had been fused with a neighboring town were again separated, thus increasing the number included in the organization without affecting the area or population involved.

The Tarlac organization did not prosper. A majority of the municipal councils had voted, in May, 1915, to enter the organization and the provincial board took the matter up at the same time, but finding the province short of funds, applied for and secured authority to postpone organization until January 1, 1916 on which date it went into effect. When the municipal budgets for 1916 were submitted, the provincial treasurer ruled, upon his own responsibility, that the authority to postpone the date of organization had voided the previous favorable action of the municipalities, and disapproved, upon this ground, those municipal budgets which contained assignments for the health fund. By the time this action came to the notice of this office, the municipal funds had been so handled that there was nothing left for the health fund, and it became necessary to dissolve the organization at the end of March. Out of the remnants, a local organization in five towns was saved.

At the end of the year, therefore, fifteen provinces were completely organized with the exception of two municipalities in Albay, and ten in Tayabas, with three divisions in other provinces, a total of 131 sanitary divisions, comprising 381 municipalities. Of these, two divisions were attended to by district health officers in addition to their other duties, 110 were provided with physicians regularly appointed, 13 were held by cirujanos ministrantes or male trained nurses with temporary appointments, and six were vacant but to be filled shortly. A proportion of these new sanitary divisions displaced former municipal boards of health, the presidents of which were usually appointed to the new positions, while there were still remaining in the provinces unorganized as a whole 34 towns with physicians and 23 with cirujanos ministrates as presidents of boards of health, and 21 municipal health districts comprising 60 municipalities with physicians, and 5 comprising 10 municipalities with cirujanos ministrantes, as presidents of the districts. To sum up there were 107 more municipalities with an organized service and 18 more qualified physicians as local health officers at the end of the year than there had been at the beginning, and out of 744 municipalities in the provinces coming under the provisions of Act No. 2156, 508 had been organized, while 165 physicians and 41 cirujanos ministrantes were serving as local health officers.

Efforts to organize the remaining provinces in compliance with the law were unavailing, with the partial exception that the scheme of organization in Pangasinan was at last approved by the provincial board and accepted by a sufficient number of municipalities to pave the way for the formation of five divisions covering one third of the province. The necessary funds have, however, not yet been forthcoming.

The difficulty in meeting the cost of the organization is usually found to affect the province to a greater extent than it does the component municipalities. The expense involved depends, to some extent, upon the facilities of communication within a province, as determining the number of sanitary divisions into which it must be arranged, and therefore the number of local health officers which it is necessary to employ. The minimum of organization necessary to comply with the law is a sanitary inspector and a free dispensary in each municipality, and a president for each division of not to exceed four municipalities. Where municipalities are separated by short distances only, and are connected by good roads, one local health officer can easily attend to the full number of four. In other instances where distances are great and communications poor, not more than two municipalities can be efficiently handled by one man. The estimated outlay must therefore include the salaries of the necessary number of presidents of divisions, fixed by the law at a minimum of ₱1,200 each per year, plus expenses for each municipality to cover the salary of the sanitary inspector, traveling expenses, and the purchase of dispensary stock and disinfectants, the total of which will amount, on the average, to not less than ₱500 per town.

Calculated upon this basis, 8 per cent or less of the general funds of the municipalities will, in most cases, cover the half of the expense to be contributed by them. In Samar, 10 per cent, and in Ambos Camarines and Bataan, approximately 12 per cent, would be required.

On the other hand, on account of the stricter limits of taxation for provincial purposes, and the resulting fact that the revenue of a province is usually half or less of the total revenue of its component municipalities, the requirement that the province contribute one-half of the health fund, constitutes a heavier burden, the proportion required running usually between 12 and 15 per cent, and in a few cases exceeding the latter figure.

Nevertheless provincial governments should not, as many of them appear to do, regard health organization as a luxury to be provided only after all other governmental functions have received attention, but should realize that the protection of the public health is one of their most important duties, and that the law which prescribes the form which that protection shall take is mandatory in character, and requires them to maintain a health organization in exactly the same degree that it obliges them to pay the salaries of the governor and other functionaries of the province.

The cost is not too high for the results to be attained. The maintenance of order, involving the protection of life and property against violence and fraud is, by the common consent of all except sanitarians, the prime and most important function of government. The sanitarian places alongside of this, as of equal rank and of no less importance, the protection of the public health. At a very low estimate, and entirely aside from epidemics, not less than 30,000 lives are lost annually in the Philippines from diseases easily preventable, in the sense that the knowledge of their causes and of the methods of prevention are in our possession, although the means of putting this knowledge into practice are lacking. It is difficult to conceive of a loss of life of equal extent, due to violence and crime through any failure of the governmental mechanism for its protection short of complete anarchy. The economic losses are not less in proportion.

Even in the provinces already organized there is a persistent tendency, whenever the necessity for economizing arises, to do so at the expense of the health fund instead of making a proportionate reduction in the expenditures of all departments. Thus the province of Tayabas, when it found it difficult to collect taxes on account of the widespread destructive effects of a typhoon, initiated a movement to abolish the health organization. A majority of the municipalities, however, registered their disapproval of the proposition, and this office was able to indicate adjustments which made it possible to carry on the organization without seriously embarrassing the province. The province of Zambales, finding itself confronted by an overdraft of ₱5,000, due, it is stated, to an error in estimating the proceeds of the land tax, requested authority to take one-half of the amount from the health fund. Nueva Ecija, in possession of a neat balance in the health fund from previous years and with a laudable desire to increase its mileage of good roads, secured authority to loan the balance to the road and bridge fund. It was found later that the current contributions to the health fund were insufficient for the maintenance of the work, with the result that a number of employees of the health organization were dismissed, and that the salaries and the traveling expense accounts of others are several months in arrears.

Antique, Capiz, Iloilo, and Leyte all applied for authority for reductions in the amount of the health contributions. In each case, the circumstances were carefully reviewed, and recommendations were made which secured the continuace of health work, while lightening as far as possible, the burden on the provincial finances.

DISPENSARIES AND LABORATORIES.

One hundred eighteen new dispensaries for free treatment for the poor were added during the year to the large number already existing. Ninety-eight of these were installed in connection with the organization of sanitary divisions, the remainder, one of which is in connection with the Cuyo Hospital, being in the unorganized provinces. The reports, which are not complete, show that more than 100,000 people have enjoyed the benefits of free consulation and medicine, and indicate that this part of the health work is that most highly appreciated by the public.

Four more provinces acquired laboratories during the year and five district health officers took the prescribed laboratory course. An additional class of three which it was expected to order in to Manila for instruction, was suspended on account of the outbreaks of cholera.

PROVINCIAL SANITARY INSPECTORS.

Another step in the direction of efficiency in the provincial organizations has been taken by bringing the sanitary inspectors under civil-service regulations as to qualification and appointment. The laws governing health organization in the provinces prior to the passage of Act No. 2156 had contemplated their employment only in case of epidemics or other emergencies, and it was customary to take on, when the emergency arose, the best material locally available, which was not usually very good on account of the small compensation which could be offered. There was no time to give them more training before entering upon the discharge of their duties, than mere orders to do such and such things, which were supplemented by explanations and demonstrations as the occasion presented. The usual qualifications were the ability to read and write, a fair physique and a presumed willingness to work. When the emergency had passed, they were dismissed and returned to their previous occupations.

When the provinces began to organize under the provisions of Act No. 2156 which made the first provision for permanent inspectors in provincial towns, the only men available with any training were those who had obtained it in one or more short periods of service of the kind just outlined. The publication of the Service's Sanitary Inspector's Handbook in 1913 gave these their first readily accessible opportunity to acquire a knowledge of the principles involved in the work. Following this, classes for instruction were formed for short periods in various provinces, and several district health officers held examinations based upon the handbook for their own guidance in making appointments and promotions.

With the extension, on the reorganization of the Service in 1915, of the new type of local health organization to a larger number of provinces, it was at once apparent that the fixing of a uniform qualification for local sanitary inspectors throughout the Islands was necessary, and an examination was held in March, the necessary questions being prepared in the Central Office and furnished to each district health officer under seal. The examination papers were also rated in the Central Office. While the examination was open to all who could meet the not too exacting requirements, the sanitary inspectors already serving were invited to appear with the understanding that they would acquire a permanent status by successfully passing, while failure to appear or qualify in the examination would not cause their separation immediately if their previous service record was satisfactory, but would leave them with a temporary status, and that future appointments would be made only from the eligibles secured as a result of the examination.

Beginning with their regular semiannual examination in the provinces in September, the Bureau of Civil Service took over the examinations and will hold them hereafter as frequently, not exceeding twice a year, as may be necessary to maintain an eligible list. Through a lack of interest in some provinces and a large percentage of failures among those attempting the examination in others, the number of eligibles is not yet sufficient in a majority of the provinces so that the desired permanency in the service has not yet been attained. In many cases the answers to the technical questions made it apparent that the applicant had either not studied the subject of sanitation or had utterly failed to comprehend it.

AUTOMOBILES AND TELEPHONES.

The development of a network of good roads which has been going on in the Philippines for a number of years past has greatly affected the conditions under which health work is done in the provinces. In general it may be said that the increased facility of communication has enabled the district health officers to handle the areas committed to their care with greater effectiveness, though in a few cases where the competition of motor transportation has practically driven the horse drawn vehicle out of business, an increase in the cost of travel has resulted.

The health organizations of Cebu and Bulacan provided automobiles for their district health officers two or three years ago and the use of this rapid transportation has been of such advantage in making possible the immediate investigation of suspected cases of dangerous communicable disease, and the prompt application of sanitary measures in the field, as well as intensive supervision of subordinates, that this office is encouraging the provision of automobiles wherever a majority of the municipalities of a province can be reached from headquarters over good roads. The Tayabas organization acquired one during 1916, and several other provinces contemplate doing so in the near future.

The advantages of the telephone have been enjoyed for a longer time, as many provinces have long maintained telephonic communication between the provincial capital and the various municipalities. This has been customarily used by the district health officers of such provinces to keep in close touch with health conditions. Several officers have recently introduced the improvement of requiring a daily telephone report of the number of deaths occuring during the previous twenty four hours, which is checked with the normal rate for each town, any excess being the signal for an immediate investigation and the employment of such measures as may be applicable.

CHOLERA.

The experience of the last two years and the year just past in particular has been fruitful both in the application of improved methods to the suppression of cholera in the provinces and in the added knowledge gained of the factors in the endemicity of the disease in the Philippine Islands. There was a time when a medical officer of the Service went single-handed into an infected district and was expected to, and did, successfully control an outbreak of cholera with the means he could find on the spot. It was necessary to secure appropriations and the passage of suitable ordinances from the municipal council, procure disinfectants, recruit and instruct sanitary inspectors, teaching them their duties largely through the correction of mistakes, maintain the most efficient house quarantine possible with the few municipal policemen available, and possibly some temporarily employed, or at times volunteer, quarantine guards.

Later he went into the field at the head of a flying squad of trained sanitary inspectors who became the back bone of such local organization as existed or could be extemporized, and had at his disposal the valuable assistance of the Constabulary for quarantine duty. The provincial and local health officers who had been appointed in the early years of American administration of the Islands from the ranks of the medical profession were, as a rule, while competent as physicians, unaccustomed to think in terms of sanitation and at first were of little use as epidemiologists. With experience gained by the older men as sanitarians, the elimination of the conspicuously unfit, and their gradual replacement by younger and more adaptable men who have enjoyed the benefits of a modernized professional training, and with the extension of a stronger type of provincial health organization, it has come to pass that a considerable proportion of the provinces are able to handle their own outbreaks and that it is only necessary to send them assistance when there are indications that the situation is liable, otherwise, to get out of hand.

The Service was, then, better equipped than ever before to handle successfully a widespread epidemic of cholera and it was well that it was so, since although no cholera was being reported from the provinces at the beginning of the year, the four or five provinces immediately to the north of Manila and every province to the south except three became infected. A notable epidemiologic feature of the epidemic was that there were above twenty apparently independent foci. The disease appeared at widely separated points, the first cases being in persons who had not recently been in any locality where there was any known opportunity for infection and in a number of instances not even away from the immediate neighborhood of their own homes. To three of these foci could be traced the infection of about four-fifths of the entire area involved. Two of these had their beginning in June, one, originating probably in the province of Rizal, then involving Manila and successively Bulacan, Pampanga, Bataan, Zambales, and Cavite extensively, one town in Nueva Ecija, and imported cases in Tarlac and Pangasinan where, however, there was no spread. The other was in Ambos Camarines from which Albay and Sorsogon were infected. A little later than these two, the third principal focus appeared in Iloilo whence it spread to Occidental Negros, Antique, and Capiz, besides one case which died on shipboard at Dumaguete, Oriental Negros. Foci of less but still considerable importance were those in Laguna, Batangas, Samar, Leyte, and Romblon.

In a majority of cases the provincial organization proved entirely competent to handle the situation. It was necessary to send an officer temporarily to North Camarines on account of the difficulty of communication between the two parts of the province, and the fact that the district health officer was fully occupied with the Southern portion; to Iloilo because the district health officer was not handling the situation effectively, and to Cavite and Occidental Negros on account of the extent of territory involved. In eight other provinces the local forces were reënforced for longer or shorter periods by the dispatch of Insular sanitary inspectors.

The attitude of provincial and municipal officials and of the people has been in most cases one of hearty coöperation but there were a few notable exceptions. The municipal president of Indan, Camarines, where there was no sanitary organization, allowed a week to pass before he reported the presence of the disease, meanwhile the survivors were flying from infected houses, giving rise to a rapid spread of the epidemic and to the most intense local infection seen during its entire course. In Iloilo, both provincial and municipal officers were apathetic in the beginning, then resentful of the Service's efforts to control the situation, then repentant and willingly coöperating when confronted with the example of a few public spirited citizens who volunteered for service in the emergency cholera hospital which was established. It is desired to mention in this connection Mrs. Bordman, Mrs. Carson, and Dr. Hall, with his staff of nurses from the Mission Hospital. A belief that the deaths from the disease were due to poisoning of the wells gained currency among the lower classes and made some trouble. It was necessary on one occasion to disperse a mob which had gathered for the purpose of dealing with supposed poisoners. There was also some resistance to hospitalizing the cases, the most marked manifestation of which was an attack on Medical Inspector Llora, who however escaped unhurt. For a while there was so little coöperation that men could not be secured to bury those dying at the hospital and Dr. Llora, in addition to very heavy other duties, performed this service himself.

As regards other Bureaus of the Insular Government, assistance and coöperation have been freely given whenever requested. Recognition is especially due to the Philippine Constabulary for the eminently satisfactory manner in which the arduous task of maintaining house quarantine has been performed in numerous localities, in fact whenever the number of municipal police were insufficient; and to the Bureau of Education for the loan of schoolhouses for temporary use as emergency hospitals, as well as efforts directed to the dissemination of knowledge with regard to the nature of cholera and the precautions which should be taken.

When it became evident in the first half of July that Hagonoy, Bulacan, promised to repeat its experience of former years when it had been the town which, in the entire province had suffered most and longest from cholera and the most difficult one from which to eradicate the disease, a new departure was decided upon, and a proposition was made to the municipality to organize an emergency hospital on a coöperative basis, the Service to furnish equipment, the provincial health organization, the personnel and medicines, and the municipality to find the building and subsistence for the patients. The councilmen were frankly pessimistic as regards the possibility of hospitalizing the cases in that town, which, they stated had unpleasant recollections of a former cholera hospital operated there during the epidemic of 1902. However, they finally agreed to try the plan. It proved impossible to rent a suitable building for the purpose, so that the council finally made temporary provision elsewhere for the school, and the use of its building was secured from the Bureau of Education. The other arrangements were concluded promptly and a hospital with 50 cots was opened within five days of the original meeting. The attitude of the people was far from cordial during the first few days of the hospital's existence, but all of the cases that could be found were brought in, some of them against their wills. The first case to be discharged as recovered, about a week later was one of these. The effect of this patient's account of her treatment in the hospital was immediate. There was a sudden jump during 48 hours in the number of cases reported, due to the bringing out of concealed cases, after which the number begun to diminish and was soon down to about a case per day. On account of the special circumstances existing, the relatives and friends of the patients were allowed to come and go freely with carefully supervised hand washing in a disinfectant solution as the principal precautionary measure. This apparent license was amply justified by the popularity acquired by the hospital, the general results obtained and the fact that out of hundreds of visitors, only two were subsequently admitted to the hospital as patients. The hospital's results in the way of a reduced percentage of fatal cases were also very gratifying.

Later in the campaign against the epidemic, the procedure of establishing a temporary hospital was employed in three other localities in Bulacan with equally good results. It was also adopted in the Iloilo campaign, as has already been mentioned, and in several other provinces by the district health officers on their own initiative, after having seen the press reports of the results in Hagonoy.

A prophylactic measure which appears to have some value is the administration of very moderate doses of aromatic sulphuric acid to contacts with a view of preventing the development of the disease in case infection has occurred. Several provincial health officers, following the lead of Senior Medical Inspector J. W. Smith, in charge of the sanitation of Bilibid prison, have employed the procedure in an experimental mood, and report, without figures, a general impression that the proportion of cases developing among contacts is smaller when this medicament is employed.

TYPHOID.

Sporadic cases of typhoid occurred in most of the provinces. In only two cases, however, were there small epidemics. One was in Lipa, Batangas between the latter part of April and the early part of June, with 15 positive cases, 16 doubtful, and 13 of paratyphoid. In Cebu Province, in the barrio of Tuyan, Naga, 52 cases occurred. The establishment of an emergency hospital in the barrio and the isolation in it of all the cases promptly terminated the outbreak. In Alaminos, Pangasinan, where a small amount of typhoid had been present almost constantly for more than two years, the local health officer succeeded in popularizing antityphoid vaccination with the result of securing the disappearance of disease.

DYSENTERY.

The localities in which dysentery became epidemic were not so numerous this year, though as usual there were a large number of cases of this disease scattered over almost the entire area of the Islands. Occidental Negros reports a marked diminution in its prevalence coincident with the boring of 40 new artesian wells, while the district worst afflicted was that comprising the three Ilocano provinces, where attempts to secure artesian water have not been successful, and the main dependence for water for domestic use is still the surface well. There were severe local outbreaks in Tayabas, Tayabas, and in Paombong, Bulacan, and less severe ones in several other towns in these two provinces. In Tayabas, the outbreak occurred in January and February; in the other localities in accordance with its customary prevalence from June to August at the height of the rainy season.

SMALLPOX.

Scattered cases of varioloid were registered in various provinces; a total of 75 in Cebu; 36 in Ilocos Norte, a few, exact number not reported in Pampanga, and 32 in Oriental Negros, all of which recovered. The only provinces in which cases of unmodified smallpox occurred were Samar and Leyte. In the latter province there were a total of 715 cases of smallpox and varioloid with 44 deaths, in eight towns. An active vaccination campaign was carried on, and no further cases occurred after July, while in Samar there were 150 deaths in ten towns, five of which were not entirely clear at the close of the year.

BERIBERI.

This disease is so intimately connected with questions of nutrition that its presence in the Philippines is not to be wondered at in view of the well recognized lack of balance in the ordinary diet of the Filipino, in which carbohydrates, principally in the form of rice, are taken in excess of the quantity required while both fats and proteins are deficient.

A certain small proportion of the population are probably below the lower limit of physiologically sufficient nutrition, while many are so little above this line that they have an entirely inadequate factor of safety, and almost any untoward circumstance may temporarily depress them below it.

This is a condition which ordinary sanitary measures will not reach and is therefore beyond the immediate control of health officers. It must be attacked through educational propaganda, and the general improvement of economic conditions, and especially through making available a larger variety of food stuffs with preference to those having an appreciable protein content. The Service's campaign for home gardens in which the leguminous vegetables are to occupy a principal place is an important step in this direction and has been actively forwarded by the district health officers.

RABIES.

The notice mentioned in the last Annual Report as having been prepared in accordance with the terms of Act No. 2461, the Rabies Law, and with the data obtained by a thorough investigation of all parts of the Islands, was finally approved in the latter part of March and published shortly thereafter. By it, the disease was declared to be a danger to the public health throughout nineteen provinces as follows: Albay, Ambos Camarines, Bataan, Bulacan, Cagayan, Cavite, Capiz, Ilocos Sur, Iloilo, Isabela, Laguna, La Union, Leyte, Occidental Negros, Pampanga, Pangasinan, Rizal, Tarlac, and Tayabas, as well as in the city of Manila. The separate islands of Catanduanes, Marinduque, and Polillo, and the Romblon group, forming parts respectively of the provinces of Albay, Tayabas, and Capiz, were excepted from the area to which the law was applied as no cases had been recorded on these islands.

This notice was accompanied by a drawing of a suitable muzzle so designed as to be effective in preventing biting, yet meeting all possible reasonable objections on the ground of the comfort of the animal. It warned all owners or possessors of dogs or other animals liable to convey the infection to keep them muzzled or otherwise effectively restrained for a period of two years from the date of publication. It was published in the local newspapers in all cases where there was one in the province, as well as in the Manila papers and in the Official Gazette. Copies were also posted in each municipality in the local dialect as well as in English and Spanish. One of the first difficulties encountered was in connection with the posting of the notices. In the provinces where an effective health organization existed, the posting was usually done by the sanitary employees who attended to it promptly. In the province of Rizal, however, where the notices had been sent to the municipal presidents for posting, it was found upon investigation about a month later that the posting had been neglected, and it required much exertion on the part of the district health officer to secure the execution of this first necessary step to its enforcement.

The law, while not popular, met with no active, but a great deal of passive resistance. The lack of coöperation on the part of municipal officials which was encountered generally was apparently due to the fear of losing popularity, combined with the circumstance that an electoral campaign was in progress. The first active effort at enforcement was in Tayabas, where the municipalities were induced to establish pounds and to undertake a dog catching campaign. Only dogs which were running at large were impounded, but the number reached 2,000 in a single week. In view, probably, of the penalty for failure to restrain their animals, the owners failed to appear and it was not possible to find any one who would admit being the owner of an impounded dog, so that after a reasonable interval these were humanely disposed of. The effect was immediate. In traveling from Manila to Lucena shortly afterwards, dogs were seen in plenty until the Tayabas boundary was reached, but within that province there were absolutely no dogs at large, at least along the main road.

In Albay after other measures had been found unsuccessful, poisoning was effectively employed. This province had had a larger number of cases of rabies than any other, several of which were fatal human cases, and the measure had the support of a considerable proportion of the residents. The system used was carefully worked out, poisoned balls of meat being fed by the sanitary inspectors directly to each loose dog met, and being recovered if not eaten. By this means over 25,000 dogs were dispatched up to the end of the year and it is reported that while the province is not yet entirely free from loose dogs, one is seen now where there were a score formerly, and that the use of muzzles and leashes is becoming generalized.

In the remaining provinces, the enforcement of the law has been somewhat desultory, but has nevertheless been the cause of better care of such dogs as are at all valued by their owners. It appears to be the case that there are numerous dogs, mostly curs and frequently half starved, whom nobody claims or gives any attention to, but which pick up a poor living as best they can, and it is precisely such dogs that are most dangerous as possible foci of rabies, and the community and the dogs themselves will be better off when they are exterminated. Another feature of this question, not often considered, is the economic waste, in food consumed, by numerous animals that are of absolutely no value.

As against 113 fatal human cases of rabies occurring during the two years covered by the investigation made prior to the application of the law, 51 deaths appear in the statistical reports for 1916 from this cause only 9 of which were the subject of special reports, 4 in Albay, 2 in Iloilo, 1 in Pangasinan, and 2 in Ilocos Norte, in which latter province proclamation had not yet been made. The remaining cases were only heard of when the periodical death returns were forwarded, some time after the occurrence, and almost half of them were in provinces not yet under the law. On the other hand, six of the provinces to which the law had been applied reported no cases either in human beings or in dogs in 1916. In the proclaimed provinces, the health officers have been assiduous in securing reports of all cases of suspected rabies in dogs, and in administering preventive inoculations to the human victims. Only three of the fatal cases had had the inoculations, and in these death supervened before the conclusion of the treatment. One case was noteworthy on account of the long period, eleven and a half months, elapsing between being bitten and developing symptoms, and especially so as the bite was inflicted on the hand. Investigations are now under way looking to the more extended application of the law.

BLINDNESS.

In order to ascertain how much, if any, the number of blind in the Philippines is increasing, the district health officers were instructed to have checked up all the surviving babies of those born during the calendar year 1915, ascertain how many had become blind in one or both eyes, and as far as possible, the cause of blindness in the cases found. It was felt that the investigation would be of peculiar interest at this time in view of the general recognition that the two causes of blindness which overshadow all others are gonococcic infection of the eyes of the newborn, and smallpox, and that the latter disease has all but been driven out of the Philippines by persistent vaccination, while prostitution with its attendant diseases has never been prevalent in the Islands, though there are indications of a tendency to increase during the last few years. The blind seen casually in the provinces are largely adults, and the causal condition in the majority is an opacity of the cornea, while the individual is likely to bear the scars of small pox.

The returns received cover twenty eight provinces in which information was obtained regarding 201,163 babies, out of which 87 were blind in one eye and 78 in both. Of these 165 cases, 29 were stated to be the result of ophthalmia neonatorum, 10 as due to trauma, 8 more were bracketed as due to ophthalmia and trauma, 2 were from smallpox, and in 3 cases corneal opacities were stated to exist. Twelve were reported as "congenital," "born blind" or blind "from birth" without further explanation. In the remainder of the cases no history or a manifestly unreliable one was obtained.

This low figure for the occurrence of blindness is the more remarkable when considered in connection with the lack of skilled attendance upon midwifery cases which is still so general in the provinces, though a good beginning has been made in several toward providing trained midwives or nurses, and improving the conditions under which delivery takes place, and the care received by the infant during the first few days of life, and still fewer cases will undoubtedly occur as service of this nature is extended.

WATER SUPPLY.

The number of new artesian wells drilled during the year was 239, surpassing that of the previous year. Several municipalities which had their share of the cost ready were disappointed in their desires for more wells, either because the Insular appropriation was exhausted, or because drilling rigs were not available. In the municipality of Capiz where several attempts to drill wells had failed, and no natural source for supply by gravity was available within a practicable distance, a million gallon concrete tank was constructed for the storage of rain water against the necessities of the dry season. Five new gravity systems were constructed, in Magallanes, Sorsogon; Subic, Zambales; and Moalbual, Sibonga, and Naga, in Cebu province. In the five towns of Cebu province, including these three, which now have gravity systems in operation, 59 public hydrants have been installed.

A survey of parts of the provinces of Cebu and Occidental Negros was made by Mr. Behrman of the Bureau of Science with reference to the sanitary quality of supplies in use and to the existence of safe local sources which might be developed. He was able to indicate a number of suitable supplies which can be made available by gravity systems, and to demonstrate that certain of the actual supplies in use are unsafe, his results being in complete conformity with those of work previously done in other parts of the Islands, including that of the Sanitary Commissions, the general conclusion from which is that surface supplies are always, under existing conditions, liable to pollution and are frequently actually polluted, while the water from a flowing artesian well is practically sterile at the well. It is hoped to be able to arrange for a similar survey of other provinces during the year now beginning. In the three Ilocano provinces notably, improvement of the water supplies, at present obtained almost exclusively from surface wells, is imperative. These provinces have not been found favorable locations for artesian wells, but as they are formed chiefly of a narrow coastal plain intersected every few miles by the numerous small streams whose sources are in the abruptly rising mountain range which backs the plain, it should not be difficult to find excellent sources for gravity supplies.

WASTE DISPOSAL.

In the general introduction into the provinces of the sanitary disposal of excreta, made possible by the adoption during the previous year of the "Antipolo system" privy, great progress has been made. The approval of an ordinance requiring this system as a minimum provision for the purpose, was secured in 42 municipalities, in spite of the fact that this was election year and that municipal councillors were chary of taking action toward the introduction of progressive measures which would be the occasion of expense to the voters and therefore a possible source of loss of votes. In Boac, Marinduque, where the system was introduced by the sanitary commission, the council set aside a fund for the construction of conveniences on this system for individual householders against reimbursement on the installment plan. In not a few places, installations were put in voluntarily by progressive citizens to whose attention the merits of the system had been brought in various ways. Altogether, more than 6,000 privies on this system have been constructed during the year not including in this count those in the province of Agusan where the district health officer reports that it is in general use, and the campaign has only just begun.

Information which has been collected as to toilet facilities at municipal buildings and school buildings and as to private residences with modern flush closets may be summarized as follows:

Municipal buildings, 14 with flush closets, and 107 with either Antipolo systems or pail systems.

Private residences in the province with flush closets, 822, with several provinces not heard from, among which is Iloilo where it is known that there is a large number.

The reports on toilet facilities in connection with school buildings can best be presented in tabulated form:

School building of—	System of waste disposal.				
	Water closets.	Pail system.	Pit closets.	No closets.	Total.
Concrete	12	83	216	79	390
Wood	25	80	820	473	1,438
Bamboo and nipa or cogon	2	23	815	692	1,532
Total	39	186	1,891	1,244	3,360

In the number given as pit closets are included 22 Antipolo systems, and 46 surface closets are counted as "No closets" as they have no sanitary value. Of 26 provincial high schools which are included in the figures tabulated, 5 had pit closets and one no provision, the remainder being provided either with water closets or pail systems.

The pit closets which, as shown, are the prevailing type, are usually covered by a portable superstructure. When the pit is nearly full, a new one is dug and the superstructure is moved and placed in position over the new pit, while the old one is covered over with earth. It is inferior to the Antipolo system in being not so thoroughly fly proof, but is well adapted to small barrio schools of temporary construction. For large permanent school buildings something better should be provided.

A difficulty in securing a satisfactory water supply for water closets is frequently met with in the provinces except in the few cases where there are gravity water systems. A majority of artesian wells have not enough head to raise the water into a tank at a sufficient altitude, power pumping is expensive, hand pumping tiresome and unreliable, and windmills cannot be expected to be popular in a country so often visited by destructive storms. The question requires further study.

SANITARY COMMISSIONS.

The sanitary commission which at the beginning of the year was at work in Parañaque, Rizal, completed the survey of that town and successively of Las Piñas, Navotas, and Malabon where it had practically completed its work at the end of the year. The second commission finished its survey of Antipolo, went from there to Boac, Marinduque, and upon the termination of its task there, to Hagonoy, Bulacan, where it arrived in the midst of an epidemic of cholera, in the suppression of which it rendered valuable assistance, and where it remained until the end of the year.

In these seven towns it was found that although the excess of births over deaths during the last five years had ranged from an annual average of 8.58 per thousand in the case of Parañaque, and of 16.08 per thousand in that of Hagonoy, to 27.08 in Boac, the commissions' count of inhabitants as compared with the census returns of 1903 showed an average increase in population of only a little over five per cent. Parañaque was the only town of the seven which showed an increase of population not more than accounted for by the excess of births over deaths, while in Boac there had been an actual loss of 1,087, equivalent to 6.8 per cent. This indicates a considerable current of emigration, which in the case of Boac has been principally directed to the fertile undeveloped island of Mindoro, while a part of the growth of Manila has probably been at the expense of the other towns surveyed.

With regard to housing conditions, no marked variations were found within the dwelling. Small houses of one or two rooms sheltered much the largest portion of the population. The average number of inmates per dwelling was 4.66 as against 4.55 in Pasig as mentioned in the report of the previous year, while the range of local variation was from 4.40 in Parañaque to 4.99 in Boac. The sites upon which these towns are located, however, present marked contrasts. Antipolo is in the midst of a group of hills, on one of which it is built at an elevation of between 200 and 250 meters above sea level, Navotas and Malabon occupy long narrow coastal islands and contain areas used as building sites whose level is between the tides, while little of the land is more than a meter above high tide, Parañaque and Las Piñas are on low ridges of sand on the shores of Manila Bay, while Boac is located upon an alluvial plain which is subject to floods almost annually, and Hagonoy is in the delta of the Pampanga river, on the banks of an estuary affected by the tides, amid marshy surroundings and frequently inundated.

The quality of water for domestic use was, on the whole, satisfactory. Parañaque, Las Piñas, Navotas, and Malabon, on account of their situation fronting on salt water and the resulting brackishness of surface waters, had to turn to artesian wells, while Hagonoy had participated in the general movement for good water in Bulacan province. The proportion of the inhabitants using good water, nearly all artesian, was found to be 74 per cent in Las Piñas, 86 per cent in Parañaque, 97 per cent in Malabon, and 100 per cent in Hagonoy and Navotas. In Antipolo, it was 81 per cent almost equally divided between artesian wells and springs, as there are artesian wells only in the urban district, and numerous springs in the barrios. It was only in Boac that conditions were not so good. A large proportion of the population of this municipality live in small, scattered, rural barrios and many of these still have to depend upon surface supplies. Nevertheless there were twelve artesian wells which supplied 32 per cent of the inhabitants.

In the matter of waste disposal, a marked difference exists between Antipolo and the other towns surveyed. While in the other six towns, a total of 28 houses with flush closets and 251 with other types of privies which may be regarded as satisfactory, were found, averaging less than 2 per cent whether calculated upon the number of houses or upon the basis of the proportion of inhabitants served, in Antipolo 46.51 per cent of the houses were provided with privies and 58.15 per cent of the inhabitants served, those having no facilities living almost exclusively outside of the urban section. The very satisfactory state of this matter in Antipolo is due principally to the pressure brought to bear on the municipal officials a few years ago by the Service in view of the large number of people, many of them from Manila, who use the town as a hot weather resort.

The most notable feature of the work of the two sanitary commissions during the entire year is the data obtained on intestinal parasite infection, and their close connection with those on waste disposal just outlined. Briefly, whereas in the six towns, the percentage of persons found infected ranged from 94.9 per cent of those examined in Hagonoy, to 100 per cent in Parañaque, there were only 69 per cent found in Antipolo. The difference was greater than is indicated by these figures for, while in the other towns the average specimen showed several ova as soon as the microscope was brought into focus, in Antipolo it was necessary to search several slides from many specimens before finally finding a single ovum, i. e., not only was the proportion of infected residents much smaller in Antipolo than in the other towns surveyed, but the intensity of individual infections was still more markedly reduced. In this is seen a direct effect of the generalization of a satisfactory type of privy in Antipolo and a promise of what will be accomplished in other towns by the work now being done for the extension of the proper disposal of excreta.

Ascaris infections were found to run from 44.7 per cent in Antipolo and 66.7 per cent in Hagonoy to 90 per cent in Malabon, while the percentage of hookworm infection in Malabon was 2.89 and in Boac, 16.56, the other towns falling between these figures. In both Antipolo and Boac it was observed that the highest number as well as the greatest severity of infections occurred in persons between the ages of 5 or 6 and 15 or 16.

The death returns which in each case were analyzed for a period of five years, showed one general fact, a low mortality rate for the year 1913, a year in which the incidence of cholera was also remarkably low, though this does not entirely account for the difference. The average annual rate for the five year period ranged from 23.33 per thousand in Boac to 40.84 per thousand in Navotas. Omitting the deaths under one year, the range of variation is much smaller, 15.35 per thousand in Parañaque, 16.54 in Boac, just under 20 in Las Piñas, Antipolo, Malabon, and Hagonoy, and 22.20 in Navotas. The mortality under one year bears the following relations to the total mortality and to the number of births:

	Percentage of infant mortality to total mortality.	Deaths in infants under one year per thousand births.
Parañaque	54.00	431
Navotas	45.65	310
Las Piñas	44.90	----------
Malabon	43.46	293
Las Piñas	----------	265
Hagonoy	35.08	252
Antipolo	31.98	189
Boac	29.08	134

In connection with each survey a carefully prepared plan was submitted showing the lines of urban development which were desirable in the particular case. These plans provided in detail for regularly laid out streets of sufficient width, lots of such a size as to prevent congestion, at present a common condition in the center, at least, of the urban districts, and thorough drainage. Suitable new or improved municipal ordinances were drafted and submitted, looking to the removal of existing nuisances and to preventing the occurrence of others in the future. Possibilities of economic improvement were sought out, studied and then pointed out to the local residents.

District nurses and a dietist accompanied each commission, and their work, together with the dispensaries operated in each town, was the feature which most directly and powerfully appealed to the interest of the residents. The lectures and demonstrations in cookery directed to a better balanced diet were received by a large attendance with an eager desire to learn. The value of visiting nurse work in the direction of better care of babies and the reduction in infant mortality to be expected as a consequence was so thoroughly appreciated that it gave rise to local organizations in practically all of the towns visited, the object of which is to secure the continuance of similar work.

In several instances, as the survey approached its termination, delegations were sent, representing the towns, to make a plea for a prolongation of the commission's stay. Other towns are also desirous of enjoying the benefits of a survey and a number of requests are now on file, to which it has not yet been possible to give attention, as it has not been possible with the funds available and with a scarcity of engineers, to put more than two commissions into the field.

PLANTATION SANITATION.

The results of the investigations conducted by the Service recently, through the sanitary commissions and otherwise, could be taken to heart, with great profit to themselves, by our large cultivators of money crops, particularly sugar and tobacco. We hear a great deal of the difficulty of securing a sufficient number of laborers, and active agencies are maintained for their recruiting, while the application of a few sanitary measures would produce, in the case of most plantations an immediate increase of 30 or 40 per cent in the labor available. A case of malarial fever, dysentery, or what not, among the hands on a plantation usually signifies the loss not of one, but of two men from the fields, since one of the well frequently lays off to take care of or to sympathize with the sick. The almost universal infection with intestinal parasites, while in most cases not producing actual sickness, largely reduces, both the resistance to various communicable diseases, and the working power of the individual. The loss in this latter sense is not believed to be less than one-third, that is, it is probable that, other things being equal, two men without intestinal parasites can and will do as much work as three who are harboring numbers of worms.

The elimination of preventable disease, including intestinal parasitism, on a plantation would, then result in a large and immediate increase in the effective labor available, and the knowledge of the means to bring about this desirable result is at hand. An artesian well or other safe water supply in each barrio combined with the installation of a privy on the Antipolo system at each house, would reduce the incidence of dysentery and typhoid almost to the vanishing point and would prevent reinfection with intestinal parasites. The price of two sheets of galvanized iron which is the principal part of the outlay for the construction of the privy may constitute a great difficulty in the case of a poor man whose monthly income is not much more, but the cost of a hundred privies should not stand in the way of the owner of a large plantation if by their construction he can reduce sickness among his laborers by 10 per cent and inefficiency by 30, and visualize an increased profit out of his next crop probably larger than the outlay involved. The use of quinine and mosquito nets and a usually not very large expenditure for drainage will suppress malaria, and where it is necessary to buy rice, an imitation of the Government's action in banishing polished rice from public institutions will go far toward the elimination of beriberi, which can be completed by inducing each family to maintain a kitchen garden, or if necessary farming a small area as a community garden. An active visiting nurse with some training in sanitation could be of great assistance in carrying out these measures, and the small salary paid would be a good investment.

Further, permanent sanitary houses would benefit in many ways the health and efficiency of the laborers, and their construction would largely add to the value of the plantation. The service is now able to offer the use of a new method of construction with cement shingles and slabs which are described in detail in another part of this report, in which wood and cement are so interspersed as to make the building fireproof as well as sanitary and the cost of which, making the materials on the spot, should be little more than that of the ordinary construction of bamboo and nipa.

REPORT OF THE DIVISION OF MINDANAO AND SULU.

[Dr. JACOBO FAJARDO, Chief of Division.]

I. GENERAL CONSIDERATION.

In general, considerable progress has been effected during the year in the organization and various activities of the Health Service in this Department. Our hospitals which have been in operation since 1915 have helped considerably in making the Moros realize the blessings of modern surgery and medicine; and many prominent headmen have submitted themselves not only to medical treatment but also to surgical operations. At the beginning, our hospitals encountered difficulties that seemed insurmountable which have, however, been obviated through tact and actual work. The reluctance heretofore shown by the non-Christian population toward things Christian or which emanated from a Christian as related to sanitation, medicine, and surgery, has been apparently minimized and our problems in dealing with Moros as contrasted with those encountered in Luzon and Visayas, consist of devising methods by which modern procedures not in accord with their tradition, habits, religious precepts and mode of living, may be introduced gradually and carefully in order not to irritate their idiosyncrasies and exalt their religious fanaticism.

The number of hospitals has been augmented by one, the Rizal Memorial Hospital at Dapitan; and repairs and additional construction in the other hospitals have been undertaken. The number of dispensaries has been increased by 30 over that of last year (1915); and the services of more health officers have been secured.

New activities have been initiated during 1916 with the object in view of diminishing the excessive infant mortality. To this end the services of district nurses and graduate midwives have been secured, and although it would be premature to predict success yet, the first efforts have been productive of practical value and the figures below, though limited, will give an idea as to the benefits that could be derived from this work.

II. AREA.

This division of the Philippine Health Service comprises all the territory of the Island of Mindanao and the Islands of Sulu Archipelago with a land area of about 36,540 square miles, according to the most authoritative estimates, or about one-third of the whole area of the Philippine Islands.

The territories comprised in this division of the Philippine Health Service exceed in area the kingdom of Greece or Servia, the Republic of Panama or Liberia.

III. POPULATION.

The latest conservative estimates of the present population, excluding the inhabitants of Surigao and Misamis, is 626,086 distributed as follows:

Province.	Christian.[a]	Non-Christian.	Total.
Agusan	23,000	36,500	59,500
Bukidnon	10,000	50,600	60,600
Cotabato	5,766	88,740	94,506
Davao	29,964	66,913	96,877
Lanao	8,866	76,500	85,366
Sulu	5,400	104,550	109,950
Zamboanga	47,536	71,751	119,287
Total	130,532	495.554	626,086

[a] Includes Chinese, Japanese, and all other civilized persons not Mohammedan or Pagan.

The totals of each province are those determined or adopted by the Auditor.

The non-Christian population includes the tribes of Samals, Joloanos, Subanos, Maranaos, Maguindanaos, etc.

IV. ORGANIZATION.

Act No. 2664 of the former Philippine Commission, enacted on October 14, 1916, extended the provisions of the Administrative Code to this Department transforming its Health Service into a division of the Philippine Health Service, which includes the provinces of Agusan, Bukidnon, Misamis, and Surigao, besides Cotabato, Davao, Lanao, Sulu, and Zamboanga, which formerly comprised the Moro Province. Agusan and Bukidnon as well as Misamis and Surigao were formerly under the direct supervision of the Director of Health.

Prior to the extension of the Philippine Health Service to this Department, the district health officers were designated provincial health officers and the service was under the supervision of the Department Government.

V. DEMOGRAPHIC STATISTICS.

Our efforts in securing data of births and deaths among the non-Christians have advanced but little and the same difficulties mentioned in my report for 1915 have not as yet been overcome to any extent. Among the Christians the demographic data are more trustworthy.

Data for the districts of Agusan, Misamis, Surigao, and Bukidnon are not included in this report, their definite incorporation with this division having taken place only at the end of the year. The data in question can therefore be found in the report of the Director of Health.

Marriages reported.

	Cotabato.	Davao.	Lanao.	Sulu.	Zamboanga.	Total.
Americans	2	0	2	0	0	4
Filipinos	42	311	84	65	413	915
Europeans	1	0	0	0	1	2
Chinese	0	1	3	5	12	21
Other Asiatics	0	0	0	0	1	1
Other nationalities	0	0	0	0	0	0
Total	45	312	89	70	427	943

Births reported.

	Cotabato.	Davao.	Lanao.	Sulu.	Zamboanga.	Total.
Americans	------	------	------	------	------	------
Filipinos	348	1,102	197	80	1,109	2,836
Europeans	1	------	------	------	------	1
Chinese	1	------	2	1	------	4
Other Asiatics	------	------	------	------	------	------
Other nationalities	3	------	------	------	------	3
Total	353	1,102	199	81	1,109	2,844

Deaths reported.

	Cotabato.		Davao.		Lanao.		Sulu.		Zamboanga.		Total.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
Americans	1	------	1	------	1	------	------	------	2	1	5	1
Filipinos	54	35	417	276	475	348	247	211	628	483	1,821	1,353
Europeans	------	2	1	------	------	------	------	------	1	------	2	2
Chinese	1	------	2	------	1	------	21	9	18	------	43	9
Other Asiatics	------	------	22	3	3	------	7	------	2	------	34	3
Other nationalities	------	------	------	------	------	------	1	------	------	------	1	------
Total	56	37	443	279	480	348	276	220	651	484	1,906	1,368

Summary by districts.

	Number.
Cotabato	93
Davao	722
Lanao	828
Sulu	496
Zamboanga	1,135
Total	3,274

Summary by nationalities.

Americans	6
Filipinos	3,174
Europeans	4
Chinese	52
Other Asiatics	37
Other nationalities	1
Total	3,274

Summary by ages.

	Cotabato.	Davao.	Lanao.	Sulu.	Zamboanga.	Total.
Under 30 days	12	32	13	38	115	210
30 days to under 1 year	18	66	14	69	334	501
1 year to under 2 years	11	39	23	30	48	151
2 years to 4 years	2	62	27	32	67	190
5 years to 9 years	5	49	48	38	56	196
10 years to 14 years	6	21	41	34	22	124
15 years to 19 years	1	47	79	46	65	238
20 years to 29 years	7	107	158	92	137	501
30 years to 39 years	9	96	114	35	71	325
40 years to 49 years	8	63	231	38	56	396
50 years to 59 years	2	52	48	19	49	170
60 years to 69 years	9	56	20	10	47	142
70 years to 79 years	1	15	7	5	30	58
80 years to 89 years	1	7	----------	----------	20	28
90 years to 99 years	----------	7	2	6	10	25
100 years and over	----------	3	----------	2	4	9
Age not stated	1	----------	3	2	4	10
Total	93	722	828	296	1,135	3,274

A classified report of all deaths reported.

	Cotabato.		Davao.		Lanao.		Sulu.		Zamboanga.		Total.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
Married	16	9	168	106	272	151	80	48	154	142	690	456
Widowed	31	4	40	28	9	13	20	32	29	48	101	125
Divorced	------	------	4	4	------	------	7	16	------	------	11	20
Single	8	2	78	27	106	127	43	23	75	35	310	214
Children	29	21	149	111	89	57	125	97	385	252	777	538
Condition not stated	------	1	4	3	4	------	1	4	8	7	17	15
Total	56	37	443	279	480	348	276	220	651	484	1,906	1,368

Summary.

	Number.
Married	1,146
Widowed	226
Divorced	31
Single	524
Children	1,315
Condition not stated	32
Total	3,274

Deaths among transient and permanent residents.

	Transient.	Permanent.	Total.
Cotabato	5	88	93
Davao	32	690	722
Lanao	14	814	828
Sulu	102	394	496
Zamboanga	27	1,108	1,135
Total	180	3,094	3,274

	Cotabato.	Davao.	Lanao.	Sulu.	Zamboanga.	Total.
Number of deaths with medical attendance	31	83	207	148	185	654
Number of deaths without medical attendance	62	639	621	348	950	2,620
Total	93	722	828	496	1,135	3,274

Deaths and their causes.

General diseases.	Cotabato.	Davao.	Lanao.	Sulu.	Zamboanga.	Total.
Typhoid fever	1	27		2	19	49
Typhus fever			1			1
Relapsing fever		43			1	44
Malaria	2	205	15	72	83	377
Malarial cachexia				2	9	11
Smallpox				176	4	180
Measles		2		10		12
Whooping cough	1	3		1	25	30
Diphtheria and croup			1	2	1	4
Croup				1		1
Influenza		7			3	10
Miliary fever		5			12	17
Asiatic cholera			710	8	55	773
Cholera nostras				1	23	24
Dysentery	5	56	5	41	20	127
Yellow fever		4				4
Leprosy	1					1
Erysipelas			1		1	2
Purulent infection and septicæmia	1	2			7	10
Rabies					3	3
Tetanus	7	1	4		3	15
Beriberi	3	15		4	29	51
Tuberculosis of the lungs	7	19	16	21	74	137
Acute miliary tuberculosis		8	5			13
Tuberculous meningitis					1	1
Abdominal tuberculosis		1			2	3
Pott's disease	1					1
White swelling		2				2
Tuberculosis of other organs				1	3	4
Disseminated tuberculosis	2					2
Rickets					4	4
Syphilis			1		3	4
Gonococcus infection				1		1
Cancer and other malignant tumors of the stomach, liver					1	1
Cancer and other malignant tumors of the peritoneum, intestine, rectum		1			1	2
Cancer and other malignant tumors of the female genital organs			1		1	2
Cancer and other malignant tumors of the breast					2	2
Cancer and other malignant tumors of other organs and of organs not specified					1	1
Acute articular rheumatism	1	1	1		1	4
Chronic rheumatism and gout		1			2	3
Anemia, chlorosis			2	1	4	7
Other general diseases				36	1	37
Other chronic poisonings					4	4
Other chronic occupational poisonings					1	1
Diseases of the nervons system and of the organs of special sense.						
Encephalitis					1	1
Simple meningitis	1	26			11	38
Meningitis, cerebrospinal, epidemic	2		1		2	5
Other diseases of the spinal cord					1	1
Cerebral hemorrhage, apoplexy	1	19	1		4	25
Softening of the brain		3			1	4
Paralysis without specified cause	2		1	12	4	19
General paralysis of the insane			1		1	2
Convulsions (nonpuerperal)		4		1	17	22
Convulsions of infants		16	7	34	49	106
Chorea		2			1	3
Neuralgia and neuritis					1	1
Other diseases of the nervous system		2		2		4
Diseases of the circulatory system.						
Pericarditis					1	1
Acute endocarditis		2	1		1	4
Organic diseases of the heart			1		6	7
Angina pectoris		1			1	2
Diseases of the arteries, atheroma, aneurysm, etc					3	3
Embolism and thrombosis					1	1
Diseases of the lymphatic system (lymphangitis, etc.)		5				5
Hemorrhage; other diseases of the circulatory system		1		1	9	11

Deaths and their causes—Continued.

General diseases.	Cotabato.	Davao.	Lanao.	Sulu.	Zamboanga.	Total.
Diseases of the respiratory system.						
Diseases of the nasal fossae					2	2
Diseases of the larynx		2		1		3
Diseases of the thyroid body					1	1
Acute bronchitis	6	9		9	43	67
Chronic bronchitis	2	8		1	18	29
Broncho pneumonia	2	2	1	2	27	34
Pneumonia	3	3		6	7	19
Pleurisy	1			1	4	6
Pulmonary congestion, pulmonary apoplexy					6	6
Gangrene of the lungs				1		1
Asthma	3			3	5	11
Pulmonary emphysema					3	3
Other diseases of the respiratory system (tuberculosis excepted)					8	8
Diseases of the digestive system.						
Diseases of the mouth and annexa					2	2
Ulcer of the stomach		2		1	3	6
Other diseases of the stomach (cancer excepted)		10	1		4	15
Diarrhea and enteritis (under 2 years)	4	11	2		3	20
Diarrhea and enteritis (2 years and over)		13	4	1	10	28
Ankylostomiasis		1	1			2
Intestinal parasites			2		8	10
Appendicitis and typhlitis	1		1		1	3
Hernias, intestinal obstructions				1	14	15
Other diseases of the intestines				5	7	12
Acute yellow aprophy of the liver					3	3
Hydatid tumor of the liver	1				1	2
Cirrhosis of the liver		1				1
Other diseases of the liver		4				4
Diseases of the spleen					1	1
Simple peritonitis (nonpuerperal)					3	3
Other diseases of the digestive system (cancer and tuberculosis excepted)		6	2	1	7	16
Nonvenereal diseases of genito-urinary system and annexa.						
Acute nephritis	2			2	12	16
Bright's disease		5			4	9
Other diseases of the kidneys and annexa		3			4	7
Calculi of the urinary passages					3	3
Diseases of the bladder					3	3
Uterine hemorrhage (nonpuerperal)	1				1	2
Uterine tumor (noncancerous)					1	1
Cysts and other tumors of the ovary			1			1
Salpingitis and other diseases of the female genital organs			1		1	2
Nonpuerperal diseases of the breast (cancer excepted)		9				9
Accidents of pregnancy					6	6
Puerperal hemorrhage		2	1	3	4	10
Other accidents of labor		3	1		4	8
Puerperal septicæmia					3	3
Following childbirth (not otherwise defined)					1	1
Diseases of the skin and of the cellular tissue.						
Gangrene	1		1		1	3
Furuncle		3				3
Acute abscess	1				4	5
Diseases of the bones and of the organs of locomotion.						
Diseases of the bones (tuberculosis excepted)		1				1
Other diseases of the organs of locomotion					1	1
Malformations.						
Congenital malformations (stillbirths not included)						3

Deaths and their causes—Continued.

General diseases.	Cotabato.	Davao.	Lanao.	Sulu.	Zamboanga.	Total.
Diseases of early infancy.						
Congenital debility, icterus and sclerema	5	3	7	7	74	96
Other diseases peculiar to early infancy	3	6	3	3	7	22
Lack of care	2	1	1		190	194
Old age.						
Senility	1	42	7	3	41	94
Affections caused by external causes.						
Suicide by poison	1					1
Suicide by hanging or strangulation					1	1
Suicide by drowning					1	1
Suicide by cutting or piercing instruments		2				2
Other suicides		2		1		3
Poisoning by food		4	1		3	8
Venomous bites and stings		1			1	2
Conflagration			1			1
Burns (conflagration excepted)					2	2
Absorption of deleterious gases (conflagration excepted)					1	1
Accidental drowning		5	1		3	9
Traumatism by firearms	1					1
Traumatism by cutting or piercing instruments	1				1	2
Traumatism by fall					5	5
Traumatism in mines and quarries	1					1
Traumatism by other crushing (vehicles, railways, landslides, etc.)	1		1		1	3
Injuries by animals	1					1
Starvation					3	3
Homicide by firearms			2		1	3
Homicide by cutting or piercing instruments		3	1			4
Homicide by other means	1	1				2
Fractures (cause not specified)			1	2		3
Other external violence				3		3
Ill-defined diseases.						
Ill-defined organic disease			1			1
Sudden death				1	3	4
Cause of death not specified or ill-defined	9	70	6	8	31	124
Total	93	722	828	496	1,135	3,274

NOTE.—It will be noted that the number of deaths exceeds that of births, due to the fact that no non-Christian inhabitants birth reports have ever been submitted, while deaths among them, especially during cholera epidemics, are registered by the health authorities as far as possible.

VI. COMMON DISEASES.

MALARIA FEVER.

Malaria is the most prevalent disease in this Department and although much has been done in the way of sanitary and prophylactic measures to diminish its incidence, we are yet far from being able to state that the situation is under control. A total of 13,981 cases sought treatment at the dispensaries and 28,622 treatments were administered during 1916.

The great problem in connection with malaria fever is of course the mosquito. The vast territory to be covered, the other activities undertaken and the limits of our appropriation make a thorough campaign against mosquitoes impracticable; and our methods are limited to educational and therapeutic (both prophylactic and curative) measures.

SKIN DISEASES.

The exceedingly noticeable prevalence of dermatological conditions among the non-Christians finds explanation in their mode of living. The Moros living along water fronts have their skin continuously exposed to the burning heat of the sun and the inclemencies of weather, and the integument undergoes changes which make it suitable harborage for the germs of the various cutaneous affections.

A total of 20,820 cases of skin diseases was registered in the different dispensaries and 55,706 treatments given. The most prevalent diseases in this class were dhobie itch with 10,204 cases and 21,968 treatments; ulcer, 1,926 cases and 9,453 treatments; abscess, 801 cases and 3,188 treatments; scabies, 2,790 cases and 6,919 treatments, and yaws, 2,132 cases and 6,459 treatments. The use of salvarsan and its derivatives in yaws has made a good impression among the Moros for its rapid curative action and has contributed a good deal toward promoting the work of the hospital in Cotabato.

INTESTINAL PARASITES.

The mere presence of protozoa or helminths in the intestines is not always an evidence of disease but it is nevertheless a fact that an intestinal parasite of any species contributes to lower the vitality of the host if it does not actually produce a pathological condition. A search for intestinal parasites both in healthy and sick persons was begun in 1915 in every locality where the necessary equipment is available and continued during 1916, in which year 4,634 persons were found to harbor one or more parasites in their intestines. To these patients were given 9,047 treatments. These cases and treatments were distributed as follows: ascariasis, 2,610 cases and 3,581 treatments; taenia, 882 cases and 1,662 treatments; other parasites, 2,724 cases and 3,125 treatments. In Zamboanga where a more systematic campaign has been conducted it is gratifying to report that only 48.7 per cent of persons examined were found infected. As a rule the person found with one or more intestinal parasites is subjected to treatment and a reëxamination of the stool performed whenever possible. This low percentage of infected persons may be ascribed to the disposal of excreta (pail system and flush closets) and to the rigid enforcement of the municipal sanitary ordinances.

VII. COMMUNICABLE DISEASES.

CHOLERA.

The epidemic that began during 1915 continued until May 30, 1916, in Lanao. From January 1, to May 30, 1916, a total of 861 cases with 636 deaths was registered around Lake Lanao. The same difficulties mentioned in my report for 1915 were encountered in 1916, the condition becoming worse after the flood in Taraka Valley, Romain, and Detzaan during the month of January, 1916.

On June 15, 1916, cholera was reported in the district of Margosatubig, Zamboanga. The infection was undoubtedly transmitted from Lanao for there exists a constant exchange of food and other products between the latter province and Margosatubig. The epidemic did not last long and only a few deaths were to be lamented.

In July, 1916, the epidemic made its appearance in the sanitary section of Dapitan, Dipolog, and Lubungan. The first case was traced to a family that came from Plaridel, Misamis. This epidemic remained unchecked at the end of the year, but it has not claimed so large a toll of victims as the previous epidemics. From June to December, inclusive, 125 cases with 91 deaths were registered in the whole province of Zamboanga.

A total of 986 cholera cases and 727 deaths was registered in the provinces of Lanao and Zamboanga, the other provinces having been free from infection.

A campaign against an epidemic of cholera among the non-Christians in the Department offers manifold difficulties that are not encountered in similar work among Christians. These obstacles in our work have been enumerated in my report for 1915. Again, cholera persisted in the north of Zamboanga on account of the presence of the infection in Misamis, the quarantine personnel being insufficient to enforce a rigid land and maritime isolation of the infected localities.

At the suggestion of Dr. Heiser, prophylactic cholera vaccine was tried on cholera contacts in Dapitan and Dipolog and a total of 424 persons were vaccinated, none of whom contracted the disease. It is not intended to assert that this vaccine affords an efficient prophylactic remedy, but it is worth while resorting to where other measures have failed.

SMALLPOX.

During the first half of 1916, the province of Sulu was visited by a severe epidemic of smallpox and a total of 1,633 cases with 347 deaths was registered.

In this province no successful systematic vaccination has ever been performed, and very few persons from 25 years old down in the municipality of Jolo show good vaccination scars. A factor in the propagation of this disease is the length of time necessarily employed by vaccinators in going from one infected place to another, thus affording opportunity for the vaccine virus to deteriorate. Again, the Moros were at first opposed to vaccination for religious reasons and the employment of the services of Moro vaccinators became of immense value. A contagious hospital was equipped in the city of Jolo for the segregation of smallpox cases, and house quarantine established as usual. The severity of the epidemic may be illustrated by the fact that among the two scout batallions then stationed in Jolo, there occurred relatively (as to population) more cases and more deaths than in the civilian population. Slight friction was registered between the military and the civil health organization of Sulu on account of this epidemic, but the question was settled, thanks to the good offices of the Department Governor, when it was clearly demonstrated that all the efforts within human grasp were being undertaken by all concerned.

From Sulu, the epidemic was propagated to Zamboanga, where 174 cases with 12 deaths were reported. Most of these cases were Moros and the infection did not propagate among the Christians to any extent.

VARICELLA AND VARIOLOID.

Varioloid is nothing but a mild form of smallpox and has often been mistaken for varicella. A diagnosis made by dispensary attendants or sanitary inspectors is not usually reliable, but the measures taken in either case are the same. A total of 37 varioloid and 145 varicella cases were registered during the year.

TYPHOID FEVER.

During 1916, typhoid fever visited the Provinces of Davao, Lanao, Sulu, and Zamboanga, attaining epidemic proportions in the last. In every case Widal's test was made as a contributing factor in diagnosis. Necessary measures, including antityphoid vaccination, were taken and the number of cases was gradually reduced.

Typhoid fever during 1916.

	Cases.
Zamboanga	33
Davao	33
Lanao	16
Sulu	9
Total	91

MEASLES.

Cases of measles were registered in all the provinces but they have all been sporadic.

	Cases.
Cotabato	5
Davao	9
Lanao	1
Zamboanga	1
Total	16

VENEREAL DISEASES.

Gonorrhea has always been prevalent in Jolo due to clandestine prostitution which has not heretofore been attended to properly. In January, 1916, an active campaign against the human foci of gonococcoic infection was initiated in the municipality of Jolo, the infected women being isolated and treated in a provisional hospital. It is unfortunate, however, that this campaign could not be extended also to the male carriers of the disease for they are just as dangerous to the community as the victims in the weaker sex. It may be stated *en passant* that several of these clandestine prostitutes became impregnated after treatment although they had always been sterile prior to their isolation. Venereal diseases have been registered in all the provinces of this division, but never to an alarming extent except in Sulu.

VIII. VACCINATION.

Jennerian vaccination is being rapidly introduced among the Mohammedan population of this Department. At the beginning we had to overcome the idea prevalent among the Moros that the vaccination scar is a sign of Christianity. Measures have also been taken against the illicit practice of vaccinating or inoculating with the unattenuated pus from smallpox pustules, which many a time produced the disease in fatal form.

More vaccinations have been performed during 1916 than in any of the previous years.

Province.	Vaccinations made.			Inspections.		
	Number.	Males.	Females.	Number.	Positive.	Negative.
Cotabato	8,554	5,511	3,043	4,676	2,908	1,768
Davao	4,885	2,802	2,083	4,058	1,873	2,185
Lanao	34	29	5	(a)		
Sulu	45,648	31,714	13,934	(a)		
Zamboanga	18,219	9,717	8,502	6,575	4,157	2,418
Total	77,340	49,773	27,567	15,309	8,938	6,371

[a] The nomadic conditions in these districts rendered it impossible to make the necessary inspections.

Comparative statement.

	1915	1916
Cotabato	8,773	8,554
Davao	2,730	4,885
Lanao	684	34
Sulu	7,312	45,648
Zamboanga	6,115	18,219
Total	25,614	77,340

IX. HOSPITALS.

SULU PUBLIC HOSPITAL.

The Sulu Public Hospital was inaugurated in November, 1915, and has been in uninterrupted operation since then. This hospital had to face many difficulties, but it fortunately overcame or is overcoming them all. The hospital had to compete with the military hospital whose reputation has been established for years, and to contend with the influence of the Moro medicine man ("Panday"). But constant and untiring efforts guided by scientific principles placed the standing of the hospital on a high level. Mohammedans as well as Christians began to patronize the institution which is enjoying an enviable reputation in the community. Senator Hadji Butu was once one of the hospital patients.

Hospital cases.

Diagnosis.	Remaining from last report.	Admitted.	Operations.	Dressings.	Discharged.	Died.	Remaining.
Abscess			4				
Abscess, leg		6		33	5		1
Abscess, cold	1			49	1		
Abscess, buttock		3	1	13	3		
Abscess, abdominal wall		1	1	21	1		
Abscess, femoral		1	1	3	1		
Abscess, inguinal		3	1	60	3		
Abscess, breast		1	1	17	1		
Abscess, head		1		1	1		
Abscess, alveolar		1	1	3	1		
Abortion		2		4	2		
Adenitis, inguinal		3		19	3		
Adenitis		1	1		1		
Ascariasis		4			4		
Asthma		1			1		
Asthma, bronchial	1	3			4		
Appendicitis		4	3	48	4		
Arthritis		1			1		
Arthritis, gonorrheal		2		10	2		
Anemia		1			1		
Beriberi	3	11			13		1
Bronchitis, acute	1	2			3		
Bronchitis, subacute		1			1		
Bronchitis		14			14		
Bell's paralysis		1			1		
Broncho pneumonia		3			3		
Burn, carbolic acid		1		30	1		
Bruises		1		8	1		
Banti's disease		1			1		

Hospital cases—Continued.

Diagnosis.	Remaining from last report.	Admitted.	Operations.	Dressings.	Discharged.	Died.	Remaining.
Carious teeth		2	1	1	2		
Carbuncle	1		1	26	1		
Cholecystitis		4		4	4		
Chicken pox		1			1		
Cerebro spinal meningitis		2			1		1
Cataract		2	2	79	2		
Conjunctivitis		1		6	1		
Chancre, soft		1		27	1		
Caisson disease		1			1		
Concussion, brain		2			2		
Colitis		1			1		
Constipation		1			1		
Cyst, anal		1	1	10	1		
Carcinoma		1			1		
Croup		1			1		
Cystitis		1			1		
Dysentery, bacillary		4			4		
Dysentery		46			35	7	4
Dislocation	1	2		9	3		
Dyspepsia		1			1		
Eczema		6		108	6		
Epididymitis, gonorrheal		2			2		
Endometritis		4	2	15	4		
Endometritis, gonorrheal		3	3	3	3		
Furunculosis		1			1		
Fistula in ano		1	1	20	1		
Fracture, compound	1	4	1	259	5		
Fibromyoma		2	1	29	2		
Foreign body in esophagus		1	1		1		
Gastritis		2			1		1
Hemorrhage, cerebral		1			1		
Herpes zoster		1		30	1		
Hernia, inguinal	1			35	1		
Hydrocele		3	3	42	2		1
Hemorrhoids		2	1	59	2		
Hypertrophy, nasal		2	2	6	2		
Indigestion		5			5		
Insufficiency, cardiac		1			1		
Insufficiency, mitral		1			1		
Ileocolitis		11			10	1	
Lumbago		1			1		
Laryngitis	1					1	
Locomotor ataxia		2		75	1		1
Malnutrition		3			3		
Miscarriage		1			1		
Melancholia		1			1		
Malaria		110	1	14	107	1	2
Migraine		1			1		
Myocarditis		1			1		
Myositis		2			2		
Marasmus		1			1		
Myringitis		1			1		
Nursery cases	1	21		17	22		
Nephritis		2			2		
Neuritis, multiple		1			1		
Ophthalmia neonatorum		1			1		
Otitis media		2		29	1		1
Orchitis		2		2	2		
Ophthalmia, gonorrheal		6			6		
Osteomyelitis		1		70	1		
Obstruction, intestinal		1				1	
Pregnancy		1			1		
Pneumonia, fibrinous		2			2		
Parturition	1	20	1	132	21		
Pericarditis		1			1		
Panopthalmitis		2		36	2		
Pterygium		1	1	6	1		
Pneumonia, lobar		1			1		
Pharyngitis		1			1		
Perforation, corneal		1		5	1		
Pleurisy		4			4		
Polypus, nasal		4	4	39	4		
Psoriasis		1			1		
Puerperal infection		1			1		
Proctitis		1			1		
Ptomain poisoning		9			9		
Rheumatism		3			3		
Rhinitis		1			1		

Hospital cases—Continued.

Diagnosis.	Remaining from last report.	Admitted.	Operations.	Dressings.	Discharged.	Died.	Remaining.
Retroflexion, uterus		1		4	1		
Retroversion, uterus		1			1		
Scabies		5		3	5		
Syphilis, tertiary		7		91	7		
Septichemia, puerperal	1	1		49	2		
Smallpox, suspect		2			2		
Smallpox		1			1		
Salpingitis		3	1	6	3		
Stomatitis		1		10	1		
Sciatica		2			2		
Sprue		2			2		
Sprains		1		3	1		
Tumor, parotid gland		1	1	1	1		
Typhoid fever	1	7	1	1	5	2	1
Tinea imbricata		7		10	7		
Tuberculosis, pulmonary	1	2			3		
Tuberculous peritonitis		1		1	1		
Testis, malformation	1		1	32	1		
Tracheitis		1			1		
Torticollis		1			1		
Tonsillitis		4	2		4		
Urethritis, gonorrheal		14		29	12		2
Uterus, subinvolution	1		1	10	1		
Urticaria		1			1		
Ulcer, cornea		1			1		
Ulcer, chronic		1			1		
Ulcer, gastric		2			2		
Ulcer, tropical		1			1		
Uncinariasis		8			8		
Unclassified	1	1		1	2		
Vaccinia		1			1		
Wooping cough		1			1		
Wound, incised		9		202	8	1	
Wound, gunshot		4	1	134	3	1	
Wound, punctured		1		20	1		
Wound, stab		6		122	4	2	
Wound, contused		3		30	3		
Wound, lacerated		4		53	4		
Wound, unclassified		1		6	1		
Yaws	1	3		13	3		1
Total	20	530	49	2,343	516	18	16

Total number of patients treated during the year		550
Total number of operations performed		49
Major	30	
Minor	19	
Total number of dressings		2,343
Total number of deaths		18

Nationality of patients.

Filipinos		485
Christians	310	
Mohamedans	175	
Americans		9
Japanese		36
Chinese		12
Spaniards		2
Other nationalities		6
Total		550

Sex of patients.

Male	394
Female	156
Total	550

Total number of out-patients treated during the year	8,118
Total number of visits by out-patients	17,204
Average visits by out-patients per month	1,434
Average visits by out-patients per day	48

LANAO PUBLIC HOSPITAL.

This hospital had more admissions than any of the other hospitals of the Department. The Maranaos of Lanao have already become aware of the blessings that could be derived from modern medicine and surgery and have sought, and always obtained, treatment for their ailments in the hospital. The reputation of this hospital has extended not only to Lanao but also to the neighboring Province of Misamis.

Hospital cases.

Diagnosis.	Remaining from last report.	Admitted.	Operations.	Dressings.	Discharged.	Died.	Remaining.
Abscess, arm		1	1		1		
Abscess, abdomen	1			26	1		
Abscess, peritonsilar		1	1		1		
Abscess, leg	1	3		18	4		
Abscess		7	2	59	7		
Ascariasis	1	20	1	56	21		
Adenitis, cervical		2	2		2		
Arteriosclerosis		2			2		
Ascariasis		3			3		
Amenorrhea		1			1		
Appendicitis, recurrent		11	10	99	11		
Appendicitis		20	19	181	19	1	
Alcoholism		4			4		
Adenoids	1	7	5	23	8		
Abortion		3	2	5	3		
Amputation		1			1		
Arthritis, gonorrheal		1			1		
Anemia		1	1		1		
Asthma		1			1		
Burn, coal oil		1			1		
Birth	1	7		10	8		
Bubo, inguinal		3	2	2	2		1
Bronchitis		13			12		1
Beriberi		1			1		
Convulsion		1				1	
Chancre		1			1		
Cyst, ovary		1	1	33	1		
Cholera, asiatic		6		32	6		
Cholera contact		7			7		
Cephalalgia		2			2		
Carbuncle	1	1	1	10	2		
Carcinoma		4	2	33	3		1
Cystitis		1					1
Cervicitis, gonorrheal	4	6	10	20	9	1	
Conjunctivitis		5			5		
Colic		2			2		
Colitis		1			1		
Constipation		4			4		
Chancroid		2			1		1
Cyst, dermoid		1					1
Dysentery	1	7	1		7	1	

Hospital cases—Continued.

Diagnosis.	Remaining from last report.	Admitted.	Operations.	Dressings.	Discharged.	Died.	Remaining.
Dysentery, malarial	1	1			2		
Dysentery, amœbic	2	19			20		1
Diarrhea	1	1			2		
Dog bite		1			1		
Dislocation	1	1	1		2		
Dyspepsia		2			2		
Dysmenorrhea		1			1		
Dengue fever		2			2		
Empyema	1					1	
Enteritis		7			6	1	
Endometritis		14	12	101	14		
Eczema		1			1		
Ectropea		1	1		1		
Fracture, compound		1		1		1	
Fracture	1	3		1	3		1
Fistula in ano		3	4	21	3		
Fractured bone, non union		1			1		
Gastralgia		1			1		
Grafting, skin		1			1		
Goitre		1	1	15	1		
Gastritis		2			2		
Hernia, inguinal		1	1	8	1		
Hemoptysis		1			1		
Hysteria		1			1		
Hemorrhoids		3	3	10	3		
Hypertrophy of tonsils		2	1	9	2		
Hydrocele		1	1	17			1
Indigestion		2			2		
Idiocy	1				1		
Ileocolitis		3			2	1	
Insanity		7	1	10	7		
Inflammation, uterus		3		5	3		
Insufficiency, mitral		2			1		1
Leucoma	1	2	1	62	3		
Leprocy, suspect	1				1		
Loss of vision		1			1		
Lupus erythematosus		1		1	1		
Lumbago		1			1		
Lesion, cardiac		1					1
Malaria, pernicious		1				1	
Malaria, spleen	2	9			11		
Malaria, tertian		7			7		
Malaria	2	59			59	1	1
Mastitis		1			1		
Metrorrhagia		2	1	1	2		
Malnutrition		3			3		
Meningitis		2				2	
Mumps		1	1		1		
Nephritis		2			2		
Otitis media		3	2	11	3		
Organic heart disease		1					1
Puerperium		1			1		
Pleurisy		2			2		
Ptomain poisoning		1		10	1		
Parotitis		2	1	1	2		
Pregnancy	1	6			7		
Pneumonia, lobar	1				1		
Pyorrhea alveolaris		4	1		3		1
Prepuce		2	1	6	1		1
Peritonitis		1				1	
Pterygium		1			1		
Polypus, nasal		1	2	26	1		
Pharyngitis		1			1		
Pediculosis capitis		1			1		
Rheumatism, muscular	1	11			11		1
Ringworm	1	10			6		5
Scabies	1	5			4		2
Syphilis		8	1	10	7		1
Stricture, urethral		2	2		2		
Stricture of uterus		1	1		1		
Salpingitis		1			1		
Stomatitis		1			1		
Sprue		2			2		
Sprain		1			1		
Stenosis, mitral		2			1		1
Torticollis		1			1		
Trachoma	1	3			4		
Typhoid fever	1	14	1	8	14		1

Hospital cases—Continued.

Diagnosis.	Remaining from last report.	Admitted.	Operations.	Dressings.	Discharged.	Died.	Remaining.
Tuberculosis, pulmonary	2	18	1	12	18	2	
Tuberculosis, joint		2		25	2		
Tuberculosis, spine		1		2	1		
Tuberculosis		4			4		
Tumor, malignant	1		1	31	1		
Tumor, pelvic		2	1	7	2		
Tenia circinata		1					1
Tonsillitis		15	13	15	15		
Tetanus		1	1	5		1	
Throat, sore		1	1		1		
Ulcer, tropical	1	1		127	2		
Ulcer, gastric		1			1		
Ulcer		2		28	2		
Uterus, polypus		1	1		1		
Uterus, retroversion		1	1		1		
Urethritis, gonorrheal		5	2	10	5		
Uncinariasis		5		8	5		
Undetermined		5	1		3		2
Varioloid		1			1		
Wound, gunshot	1	6	2	88	7		
Wound, contused		4		33	2	1	1
Wound, infected		14		8	12		2
Wound, lacerated		6		3	6		
Wound, crushing		2		1	2		
Wound, punctured		1		1	1		
Yaws		6			4		2
Total	37	534	127	1,345	520	17	34

Total number of patients treated during the year		571
Total number of operations among in-patients		127
Total number of operations (in and out patients)		199
Major	45	
Minor	154	
Total number of dressings		1,345
Total number of deaths		17

Classes of patients.

Moros	112
Christians (Filipinos, Americans, Japanese, Europeans, etc.)	459
Total	571
Total number of out-patients treated during the year	1,621
Total number of visits by out-patients	2,714
Average visits by out-patients per month	226
Average visits by out-patients per day	.7

COTABATO HOSPITAL.

The work in this hospital has shown considerable improvement in the line of attracting the non-Christian population to seek admission. The admission of non-Christians during 1916 has risen to about 40 per cent over that of last year (1915). But as no important repairs or constructions have been undertaken, the old building could not do more than it has, taking into consideration the lack of suitable accommodations for women and private patients. It is hoped, however, that when the new building is completed this hospital will be on the same level with the Lanao and Sulu Hospitals.

Hospital cases.

Diagnosis.	Remaining from last report.	Admitted.	Operations.	Dressings.	Discharged.	Died.	Remaining.
Abscess	1	12	10	17	12	1	
Ascariasis	1	18			19		
Asthma	1	5			6		
Abortion		1			1		
Arthritis, gonorrheal		1		1	1		
Appendicitis		2			2		
Anteversion, uterus		1		2	1		
Amebiasis		1			1		
Ankylostomiasis		1			1		
Arthritis, tuberculous		1	1	1	1		
Anemia		1			1		
Bubo, inguinal		2	2	2	2		
Bronchitis		13			13		
Beriberi		4			3	1	
Burn		6	1	9	6		
Boil		3	3	3	3		
Bright's disease		1			1		
Calculi, vesical		1			1		
Cholecystitis		2			2		
Conjunctivitis	1	10		17	11		
Constipation		1			1		
Cellulitis, pelvic		1		1			1
Dysentery		10			10		
Dengue fever		3			3		
Dermatitis		2		2	2		
Diarrhea		3			3		
Dislocation		1		1	1		
Enteritis		2			2		
Empyema		1		2	1		
Epididymitis		1		1	1		
Epilepsy		2			2		
Fistula, anal		1	2	2	1		
Furunculosis		3	2	4	3		
Fibrolipoma		1	2	2	1		
Fever, unclassified		1					1
Gonorrhea		9		11	9		
Gastroenteritis		2			2		
Goitre		1		1	1		
Gall stone		1			1		
Herpes zoster		2		3	2		
Hysteria		1			1		
Hare lip		1	2	2	1		
Hemorrhoids, external		2	1	1	2		
Hernia		1			1		
Hemorrhage, cerebral		1					1
Indigestion		9			9		
Incompetency, mitral		1			1		
Insanity		2			2		
Insufficiency, mitral		1			1		
Keratosis		1		1	1		
Laryngitis		1			1		
Laryngitis, tuberculous		1			1		
Leper, suspect		1		1			1
Malaria	3	39			41	1	
Mercurial ptyalism		1			1		
Measles		3			3		
Mumps		1		1	1		
Nephritis, acute		1			1		
Otitis		1		1	1		
Otitis media		4		5	4		
Obstruction, intestinal		2			2		
Orchitis		1		1	1		
Pharyngitis		1			1		
Pharyngolaryngitis		1			1		
Pleurisy		2			2		
Pseudo asthmatic		1			1		
Pneumonia, lobar		1				1	
Rheumatism		9			9		
Sprains		4		4	4		
Staphyloma		2		2	2		
Sciatica		1			1		

Hospital cases—Continued.

Diagnosis.	Remaining from last report.	Admitted.	Operations.	Dressings.	Discharged.	Died.	Remaining.
Scabies		5		6	5		
Sebaceous cyst		3	3	3	2		1
Sarcoma		1		1	1		
Suspected insanity		1					1
Tetanus		1				1	
Tinea versicolor		2		2	2		
Tinea circinata	4	63		84	66		1
Typhoid		4			3		1
Tuberculosis, incipient		1			1		
Tuberculosis, pulmonary		6			4	2	
Tuberculosis		1			1		
Tinea solium		1			1		
Tonsillitis		2		3	2		
Uncinariasis	1	17			17		1
Ulcer		7	1	8	7		
Ulcer, tropical		1		1	1		
Ulcer, gastric		1			1		
Unclassified		2			2		
Vaccinia		4		4	4		
Varicella		1		1	1		
Wound, contused		1		1	1		
Wound	2	28	7	44	27		3
Yaws	1	24	1	31	25		
Total	15	409	38	290	405	7	12

Total number of cases treated during the year		424
Total unmber of operations		38
Major	4	
Minor	34	
Total number of dressings		290
Total number of deaths		7

Nationality of patients.

Filipinos		409
Mohamedans	275	
Christians	134	
Americans		4
Chinese		10
Europeans		1
Total		424

Financial condition of the hospitals at the close of the fiscal year 1916.

Cotabato Public Hospital:	
Total expenditures during the year	₱9,873.00
Total revenues during the year	1,782.19
Lanao Public Hospital:	
Total expenditures during the year	14,927.58
Total revenues during the year	3,356.12
Sulu Public Hospital:	
Total expenditures during the year	17,233.87
Total revenues during the year	5,717.92

NOTE.—Expenditures for equipment are not included in the above figures.

Total number of out-patients treated during the year	9,562
Total number of visits by out-patients	17,149

Average number of visits by out-patients per month	1,429
Average number of visits by out-patients per day	47

RIZAL MEMORIAL HOSPITAL, DAPITAN, ZAMBOANGA.

During the latter part of December, 1916, the Rizal Memorial Hospital at Dapitan, Zamboanga, was inaugurated. It occupies the same building where Doctor Rizal was quartered while in exile. The hospital has at present a capacity of 12 beds which could be raised to 25 or 50 beds if necessary and the old building has been so repaired and embellished that Dr. Rizal, were he living, would not be able to recognize the house he once occupied. The sum of ₱5,000 has been appropriated for repairs to the building and purchase of equipment.

SAN RAMON PRISON HOSPITAL.

A small hospital, known as the San Ramon Prison Hospital, is in operation at San Ramon Penal Farm, Zamboanga. It is under the supervision of this office. During the year, the sanitary condition of the farm has been highly satisfactory.

Hospital cases.

Diagnosis.	Remaining from last report.	Admitted.	Died.	Transferred.	Discharged.	Remaining.
Abscess, acute		61			59	2
Bronchitis, chronic		3			3	
Bronchitis, acute	1	2			3	
Conjunctivitis, follicular		2			2	
Dislocation of right knee		1			1	
Dysentery		2	2			
Diarrhea and enteritis		3			3	
Dengue fever		61			61	
Diseases of the ear	1	4			5	
Diseases of the anus and fecal fistula	1				1	
Diseases of the eye		3			3	
Fracture of the spinal column	1			1		
Furuncle		7			7	
Intestinal parasites	2				2	
Indigestion, acute		34			34	
Malarial cachexia		1			1	
Malarial pulmonary congestion		1	1			
Malaria		5			5	
Mumps		1			1	
Nonvenereal diseases of male genital organ		3			2	1
Other diseases of the liver		1			1	
Other diseases of the skin and annexa	11	60			69	2
Other external violence		15			15	
Pneumonia		1			1	
Splenomegaly		1	1			
Scabies		1			1	
Sting, venomous		1			1	
Sprains		15			15	
Tuberculosis of the lungs		4		1	2	1
Tuberculosis of the right leg	1			1		
Traumatism by cutting or piercing instruments		18			18	
Traumatism by other crushing		3		3		
Traumatism by fall		5			5	
Traumatism by vehicle		1			1	
Toothache		6			6	
Varioloid		6			6	
Wounds and abrasions		105			95	10
Total	18	437	4	6	429	16

HOSPITAL FOR VENEREAL DISEASES IN JOLO.

This is a temporary structure intended for the confinement of venereal diseased patients most of which if not all are clandestine prostitutes under the ban of the law. This hospital has been in operation since 1915 and has helped considerably in reducing the incidence of venereal disease in the municipality of Jolo. There were no deaths in this hospital.

Total number of patients admitted during the year	33
Total number of patients operated	4
Total number of dressings	946

SICK WARDS.

Sick wards are intended for emergency cases, and for patients who are to be transferred to a hospital. The equipment and medical supplies are furnished by the Government while the patients take care of their own subsistence.

During 1916, four sick wards have been in operation distributed as follows:

Cotabato (Glan and Pagalungan)	2
Davao (Mati)	1
Lanao (Tamparan)	1

X. LABORATORIES.

There are already six laboratories in the Department and one or two more are contemplated during 1917. There is a central laboratory at Zamboanga, one in each of the hospitals except the venereal disease hospital of Jolo and the Prison Hospital at San Ramon, Zamboanga, one in Parang, Cotabato, and a field laboratory also in Cotabato devoted entirely to the campaign against intestinal parasites. Current bacteriological and other clinical examinations are performed in these laboratories and they have been a formidable asset in promoting the work of the Health Service in this Department.

LABORATORY EXAMINATIONS.

Cotabato Laboratories (Cotabato Public Hospital, Parang and Field laboratories combined).

Blood		180
For parasites	143	
Count of leucocytes	25	
Count of erythrocytes	10	
Widal's reaction	2	
Urine		295
Routine examinations	294	
Other examinations	1	
Stool		2,413
For animal parasites	2,413	

Cotabato Laboratories (Cotabato Public Hospital, Parang and Field laboratories combined)—Continued.

Sputum		89
Bacteriological examinations	89	
Discharges		251
Urethral	91	
Vaginal	144	
Others	16	
Total		3,228

Lanao Public Hospital Laboratory.

Blood		62
For parasites	56	
Hemoglobin estimation	6	
Urine		193
Routine examinations	186	
Other examinations	7	
Stool		849
Routine for animal parasites	849	
Sputum		35
Bacteriological examinations	35	
Discharges		270
Urethral	111	
Vaginal	125	
Others	34	
Total		1,409

Sulu Public Hospital Laboratory.

Blood		227
For parasites	224	
Count of leucocytes	1	
Count of erythrocytes	1	
Hemoglobia estimation	1	
Urine		125
Routine examinations	125	
Stool		235
Routine for animal parasites	235	
Sputum		3
Bacteriological examinations	3	
Discharges		306
Urethral	12	
Vaginal	263	
Others	31	
Total		896

Zamboanga Laboratory.

Blood		65
For parasites	1	
Widal's reaction	49	
Bacteriological examinations	15	

Zamboanga Laboratory—Continued.

Urine		8
Routine examinations	8	
Stool		2,792
Routine for animal parasites	2,103	
Bacteriological examinations	689	
Sputum		24
Bacteriological examinations	24	
Discharges		955
Urethral	476	
Vaginal	476	
Others	3	
Miscellaneous		11
Total		3,855

Summary.

Specimens.	Cotabato Laboratories.	L. P. H. Laboratory.	S. P. H. Laboratory.	Zamboanga Laboratory.	Total.
Blood	180	62	227	65	534
Urine	295	193	125	8	621
Stool	2,413	849	235	2,792	6,289
Sputum	89	35	3	24	151
Discharges	251	270	306	955	1,782
Others				11	11
Total	3,228	1,409	896	3,855	9,388

XI. DISPENSARIES.

Dispensaries are classified as first-class dispensaries, which are under the charge of a licensed physician or a graduate nurse; second-class dispensaries managed by dispensary attendants; and special dispensaries otherwise called school-dispensaries because the men in charge of them are school teachers who were previously trained for such work.

During 1916, 31 new dispensaries were opened and one was closed, making a total of 86 in operation at the close of the year distributed as follows:

District of Cotabato (total, 16.)

First class:
- Cotabato Public Hospital.
- Parang.
- Ladtingan.
- Pagalungan.
- Pecdu Pulangi.
- Glan.

Second class:
- Buldung.
- Buluan.
- Dinaig.
- Dudaranga.
- Didapawran.
- Macabasa.

Second class:
- Maganay.
- Pikit.
- Reina Regente.
- Tauiran.

Special, none.

NOTE.—On account of the proximity of Bacolod Dispensary to that of Parang, the former was discontinued.

District of Davao (total, 28).

First class:
- Caraga.
- Cateel.
- Davao.
- Baganga.
- Mati.

Second class:
- Bunawan.
- Guianga.
- Holy Cross.
- Moncayo.
- Madaum.
- Manay.
- Malita.
- Pantukan.
- Peña Plata.
- Santa Cruz.
- Saug.
- Taloso.
- Tagum.

Special:
- Baculin.
- Boston.
- Compostela.
- Kinablangan.
- La Union.
- Lacaron.
- Pagsilaan.
- Samal Island.
- Tagabakid.
- Tigatto.

District of Lanao (total, 13).

First class:
- Lanao Public Hospital.
- Iligan.
- Momungan.

Second class:
- Ganassi.
- Kalaga.
- Kolambugan.
- Lumbatan.
- Malabang.
- Nunungan.
- Ramain.
- Tamparan.
- Tugaya.
- Kalawaig.

Special, none.

District of Sulu (total, 15).

First class:
- Sulu Public Hospital.
- Parang.
- Siasi.

Second class:
- Bual.
- Bongao.
- Camp Andres.
- Cagayan de Sulu.
- Lugus.
- Laminusa.
- Maimbung.
- Seit Lake.
- San Raymundo.
- Sibutu.
- Taglibi.
- Tulayan.

Special, none.

District of Zamboanga (total, 14).

First class:
- Dapitan.
- Dipolog.
- Isabela de Basilan.
- Lubungan.
- Margosatubig.
- Mercedes.
- Recodo.
- Zamboanga.

Second class:
- Dinas.
- Kuruan.
- Lamitan.
- Manicahan.
- Panabutan Bay.

Special, Zamboanga.[a]

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[a] For school children only, so that it is located at the Provincial School Building.

Consolidated report of dispensaries.

Diagnosis.	Cotabato.		Davao.		Lanao.		Sulu.		Zamboanga.		Total.	
	Cases.	Treatments.	Cases.	Treatments.	Cases.	Treatments.	Cases.	Treatments.	Cases.	Treatments.	Cases.	Treatments.
Abortion	3	6	3	5	1	1			1	4	8	16
Abscess	216	923	144	544	158	536	178	709	92	482	788	3,194
Ascariasis	689	882	374	735	96	138	1,328	1,597	112	129	2,599	3,481
Acne	8	12							2	2	10	14
Anemia	65	259	56	325	62	153	101	406	24	81	308	1,224
Apoplexy			14	22							14	22
Amenorrhea	15	43	2	3			5	8			22	54
Arteriosclerosis	3	3	1	1	8	9			1	1	13	14

Consolidated report of dispensaries—Continued.

Diagnosis.	Cotabato.		Davao.		Lanao.		Sulu.		Zamboanga.		Total.	
	Cases.	Treatments.	Cases.	Treatments.	Cases.	Treatments.	Cases.	Treatments.	Cases.	Treatments.	Cases.	Treatments.
Asthma	26	74	15	79	15	35	58	92	10	50	124	330
Abdominal disease	22	50					12	16	8	22	42	88
Anthrax			4	15							4	15
Ankylostomiasis	1	21	8	15							9	36
Appendicitis	2	12	2	8	3	7					7	27
Ankylosis			1	4							1	4
Accident (death)									1	1	1	1
Amputation									5	12	5	12
Anteversion, uterus	1	13									1	13
Angina									2	6	2	6
Amigdalitis, follicular									2	15	2	15
Arthritis	6	19			1	3					7	22
Adenitis	8	10	3	6	19	89	6	41	7	38	43	184
Abrasion	1	1	31	61	1	3	8	24	6	22	47	111
Alcoholism			1	5							1	5
Alveoli									1	4	1	4
Arm disease	15	39			12	29	2	5	26	82	55	155
Adenoids					6	16					6	16
Anorexia	1	1									1	1
Aortic insufficiency			2	4							2	4
Aneurysm, artery					1	1					1	1
Aphony			1	1							1	1
Asthenopia							6	7			6	7
Accident, pregnancy									1	1	1	1
Albuminuria									1	4	1	4
Ascarides			38	81							38	81
Abscess, leg					11	39					11	39
Abscess, fauces					1	4					1	4
Abscess, arm					1	2					1	2
Blood poisoning					4	33			2	5	6	38
Beriberi	21	90	34	139	4	50	13	20	9	37	81	336
Bronchitis	1,218	2,102	359	810	1,330	2,993	814	1,363	74	230	3,795	7,498
Boil	225	799	21	60			195	631	97	315	538	1,805
Bright's disease	4	62	2	2							6	64
Bruise	7	12	3	10	14	38	7	14	53	145	84	219
Bubo	4	16			3	5	6	24	3	9	16	54
Bubo, inguinal	7	37			2	5					9	42
Burn	73	328	30	147	66	202	46	94	21	79	236	850
Blood trouble					17	45			1	8	18	53
Bite, horse									1	1	1	1
Bite, dog	3	13			2	3	1	1	23	87	29	104
Bite, insect	8	16									8	16
Bite, crocodile	2	2									2	2
Bite, alligator	2	27									2	27
Bite, snake	4	5			1	2					5	7
Bite, pig									1	2	1	2
Bilious									1	1	1	1
Bronchopneumonia	1	1									1	1
Blepharitis			4	7							4	7
Biliary calculus			1	1							1	1
Blow (unqualified)			1	2							1	2
Birth (unclassified)							1	1			1	1
Blenorrhagia			1	11							1	11
Chest disease	3	4			3	9	1	4			7	17
Catarrh									12	39	12	39
Catarrh in nose									1	2	1	2
Carbuncle			5	43	1	10	1	1			7	54
Cramp					23	25			25	51	48	76
Cold	44	72	59	91	2	3			37	53	142	219
Colic (unclassified	1	1	1	5	166	327	55	86	4	8	227	427
Constipation	825	1,112	153	258	413	969	286	392	71	139	1,748	2,870
Conjunctivitis	435	1,241	132	344	345	1,605	465	1,053	174	585	1,551	4,828
Convulsion (unclassified	1	1	10	47					3	12	14	60
Convulsion, puerperal									1	3	1	3
Colic, intestinal			52	110	3	5					55	115
Convulsion, infantile			2	10					2	2	4	12
Cough			26	50	49	92			94	373	169	515
Cystitis	12	15	4	10	27	69	9	14	2	2	54	110
Child birth	34	362	3	10					2	4	39	376
Corn	4	4			1	1	25	33	3	3	33	41
Caries, dental	4	4	21	48							25	52
Cyst	3	8					8	20	2	10	13	38
Cholera					23	49			3	5	26	54
Calculus, vesical	4	5									4	5
Coryza	1	1	9	13							10	14

Consolidated report of dispensaries—Continued.

Diagnosis.	Cotabato.		Davao.		Lanao.		Sulu.		Zamboanga.		Total.	
	Cases	Treatments.	Cases.	Treatmenst.	Cases.	Treatments.	Cases.	Treatments.	Cases.	Treatments.	Cases.	Treatments.
Chickenpox	43	185					7	9			50	194
Chancroid							11	49			11	49
Cephalalgia			57	183					63	131	120	314
Cataract			1	1					10	81	11	82
Cardialgia									1	3	1	3
Cholecystitis	4	13					1	3			5	16
Costiveness									3	3	3	3
Coxalgia									1	5	1	5
Cyclitis									1	4	1	4
Congestion									1	1	1	1
Chlorosis			1	1			3	3			4	4
Cirrhosis, hypertrophic of finger	2	2									2	2
Consumption									3	12	3	12
Cirrhosis of liver	1	1									1	1
Colitis			1	1							1	1
Colic, intestinal			18	23							18	23
Congestion, pulmonary			1	1							1	1
Colic, abdominal					159	341					159	341
Cyst, meibomian							2	2	1	2	3	4
Cellulitis, pelvic	1	10							2	2	3	12
Cyst, sebaceous	3	10			2	4					5	14
Chancre, syphilitic	1	1									1	1
Dilation, cervix uteri					2	2					2	2
Dyspepsia	10	27	42	100	18	50	4	4	39	75	113	256
Diarrhea	106	259	107	294	215	434	118	298	48	125	594	1,410
Dislocation	4	8	10	58	13	41	1	3	20	9	48	119
Dhobie itch	7,032	13,261	424	1,197	868	3,241	1,450	2,556	380	1,590	10,154	21,845
Dysmenorrhea	2	2	3	7	3	6			2	3	10	18
Dysentery	160	687	184	831	444	1,146	310	895	63	229	1,161	3,788
Dysentery, amebic									2	2	2	2
Dandruff									1	2	1	2
Dropsy	1	1									1	1
Dermatitis	25	88	30	58	5	10	1	1	1	1	62	158
Dementia									2	5	2	5
Diverticulitis									1	2	1	2
Diabetes	1	7	1	4							2	11
Debility, general	2	6							4	4	6	10
Debility, congenital									1	1	1	1
Debility, senile			1	1					1	1	2	2
Diathesis			1	2							1	2
Dacryocystitis			1	1							1	1
Elephantiasis			2	6			1	1	2	5	5	12
Eye disease	15	48	16	27	7	7	22	28	52	113	112	223
Erysipelas					4	11			4	7	8	18
Epistaxis			3	6	9	23	1	1			13	30
Ear disease	5	13	5	20	6	26	15	42	60	182	91	283
Enteritis	16	27	14	43	5	5	2	7			37	82
Eczema	52	105	78	210	21	27	76	199	19	67	246	608
Erythema	1	1	15	45							16	46
Eruption					16	22	4	6	1	3	21	31
Eclampsia			9	44							9	44
Endometritis			7	19			2	2			9	21
Empyema	1	17									1	17
Epididymitis	1	17									1	17
Epilepsy	6	17	1	1			1	1			8	19
Extremity									1	1	1	1
Enterorrhagia									1	6	1	6
Endocarditis			2	6							2	6
Edema							2	5	1	4	3	9
Emphysema, pulmonary									1	1	1	1
Fever (unclassified)	50	84	66	140	29	57			46	93	191	374
Fever, intermittent			7	16					29	65	36	81
Fever, dengue	76	202	9	25	24	60	3	14	29	61	141	362
Fever, scarlet									1	2	1	2
Fever, catarrhal									19	23	19	23
Fever, remittent									5	8	5	8
Fever, gastric			1	1							1	1
Fever of unknown cause					39	86					39	86
Fever, relapsing			1	3							1	3
Fainting fit							1	2			1	2
Furuncle					226	787			7	11	233	798
Fistula in ano			4	50							4	50
Fistula	1	20	2	6					2	10	5	36
Foreign body (unclassified)	3	3					2	8			5	11

Consolidated report of dispensaries—Continued.

Diagnosis.	Cotabato.		Davao.		Lanao.		Sulu.		Zamboanga.		Total.	
	Cases.	Treatments.	Cases.	Treatments.	Cases.	Treatments.	Cases.	Treatments.	Cases.	Treatments.	Cases.	Treatments.
Foreign body in ear							1	1			1	1
Furunculosis	53	184	15	69	1	5			16	42	85	300
Flux			1	1							1	1
Fungus									2	7	2	7
Fall									2	7	2	7
Fracture	9	57	1	3	4	15	1	1	5	14	20	90
Fissure, nipple							1	1			1	1
Fibroma of uterus	1	3									1	3
Filariasis									1	5	1	5
Fibrolipoma	2	29									2	29
Fracture, callus									1	3	1	3
Gastralgia	40	74	181	319	1	2			20	25	242	420
Gastritis	48	86	96	179	11	35	56	77	7	20	218	397
Gonorrhea	73	838	24	88	41	136	69	313	12	39	219	1,414
Gastrodynia									4	4	4	4
Grippe	2	2	49	119							51	121
Gastroenteritis	15	74	11	19	1	1	3	5	4	7	34	106
Gingivitis	6	6									6	6
Granuloma pudendorum			1	1							1	1
Goitre	1	20									1	20
Gangrene									1	5	1	5
Gall stone	1	3									1	3
Glanders									1	5	1	5
Headache	392	523	6	23	885	1,397	123	203	80	156	1,486	2,302
Herpes	2	2	214	591					56	198	272	791
Hernia	1	3	14	34			1	3	1	1	17	41
Herpes zoster	3	15									3	15
Hemorrhage	3	12	5	10					9	29	17	51
Hookworm					13	24			6	8	19	32
Heart disease	3	7					1	1			4	8
Hysteria	7	15	1	1	1	1			2	2	11	19
Hemorrhage, cord					1	1					1	1
Hydrocele			6	11			1	1			7	12
Hare lip	2	6									2	6
Hemoptysis	6	8	2	2			1	1			9	11
Hemiplegia			2	5	1	2					3	7
Hemorrhoids	4	32					1	2			5	34
Hemicrania					1	2			1	1	2	3
Hemorrhage of uterus									1	1	1	1
Hemorrhage, post-partum							2	2			2	2
Hepatitis	1	1	1	4							2	5
Hypertrophy, nasal					1	1					1	1
Helminthiasis					3	3					3	3
Hemorrhage, traumatic									1	2	1	2
Hemorrhage, cerebral	1	3									1	3
Hemorrhage, nasal									2	4	2	4
Indigestion	561	847	189	553	224	479	101	137	142	250	1,217	2,266
Infection (unclassified)									4	5	4	5
Infection from vaccination	55	208					1,095	3,101	32	73	1,182	3,382
Inflammation	12	59	14	58	43	306	7	19	62	249	138	691
Inflammation, breast									1	2	1	2
Inflammation, abdominal									3	22	3	22
Intestinal parasites (unclassified)			4	5	128	132			286	542	418	679
Ivy poisoning			11	34							11	34
Infarction, pulmonary			1	1							1	1
Influenza			33	57							33	57
Infection									11	36	11	36
Irritation							1	8	3	9	4	17
Iritis			1	4			2	6	2	11	5	21
Insomnia	2	2					4	4			6	6
Itch									50	123	50	123
Ileocolitis	1	8	1	1	2	2	15	19			19	30
Impetigo									1	6	1	6
Ingrown toe-nail	7	28					5	25	2	7	14	60
Insanity	3	24									3	24
Insanity, suspect	1	11									1	11
Ichthyosis									1	3	1	3
Irritation, stomach									2	2	2	2
Infection, puerperal									1	13	1	13
Irritation, bladder							3	3			3	3
Insufficiency, cardiac							3	4			3	4
Jaundice					1	2					1	2

Consolidated report of dispensaries—Continued.

Diagnosis.	Cotabato.		Davao.		Lanao.		Sulu.		Zamboanga.		Total.	
	Cases.	Treatments.	Cases.	Treatments.	Cases.	Treatments.	Cases.	Treatments.	Cases.	Treatments.	Cases.	Treatments.
Knee disease (unclassified)									2	13	2	13
Keratosis	375	477							1	5	376	482
Keratitis			2	6			1	1			3	7
Keratoderma	72	72									72	72
Kidney disease					1	3					1	3
Laryngitis	8	38	1	2							9	40
Leprosy	2	12			2	25			3	87	7	124
Leprosy, (suspect)	4	31	1	1							5	32
Lymphangitis	1	2	8	40	3	4					12	46
Lumbago	17	30	21	54			57	72			95	156
Luxation			1	3					1	3	2	6
Leucorrhea									1	4	1	4
Lupus vulgaris			1	2							1	2
Malaria	2,657	5,897	1,823	4,551	3,602	7,760	4,789	7,696	1,110	2,718	13,981	28,622
Malarial cachexia									1	1	1	1
Meningitis	1	1	12	32							13	33
Mercurial ptyalism	12	23									12	23
Mumps	24	76	1	1	10	20	7	13	5	7	47	117
Myositis			1	2			10	11			11	13
Micturition							3	14			3	14
Metrorrhagia	3	8	1	1	7	13			2	7	13	29
Measles	11	70	23	53							34	123
Mastoiditis							2	3			2	3
Myocarditis							1	1			1	1
Mitral insufficiency	4	49					1	1			5	50
Mammitis							9	12			9	12
Myopia									4	4	4	4
Myodinia	1	1									1	1
Mastitis	2	4	1	3			6	14			9	21
Marasmus							1	1	2	2	3	3
Monads									1	1	1	1
Malnutrition					1	8			1	1	2	9
Morphinomania	2	4									2	4
Migraine			1	14							1	14
Menorrhagia	1	3									1	3
Muguet			1	10							1	10
Melancholia							1	1			1	1
Neuralgia	42	80	85	224	22	46	160	215	49	108	358	673
Nephritis	3	6	19	45	8	38	2	6	3	10	35	95
Nephritis, puerperal					1	1					1	1
Neuritis	14	38	26	48			2	2			42	88
Neuritis, peripheral	1	1					1	1			2	2
Neuritis, multiple							1	1			1	1
Neurasthenia	1	1	6	17							7	18
Nervousness									2	24	2	24
Nasal disease									1	1	1	1
Otitis	69	297	11	35	27	68	18	36	8	26	133	462
Otitis media	14	65	27	73	4	11	15	136			60	285
Otitis externa			1	2			55	312			56	314
Occlusion, intestinal			1	1							1	1
Orchitis	10	25	5	14			11	25	1	1	27	65
Ophthalmia	3	17									3	17
Ophthalmia neonatorum	1	9									1	9
Ophthalmia, gonorrheal							1	4			1	4
Osteitis	1	1									1	1
Onychia							9	23			9	23
Otalgia			1	1							1	1
Obstruction, intestinal	5	7					2	2			7	9
Pneumonia	5	23	9	29	3	7	1	7	2	14	20	80
Postpartum (unclassified)			1	3							1	3
Paratyphoid fever	1	6									1	6
Pharyngitis	19	42	2	7			5	11			26	60
Pterygium	1	5			1	1	1	1			3	7
Parotitis			5	15					1	2	6	17
Paralysis	2	28	4	37			1	1	8	133	15	199
Paralysis, motor	2	2									2	2
Piles	1	1							8	29	9	30
Prickly heat					40	74			3	25	43	99
Pleurisy	4	30	8	18			3	3	8	34	23	85
Ptomain poisoning	1	3					1	2			2	5
Prolapse, uterus			1	27							1	27
Prolapse									1	2	1	2
Pleurodynia	8	8									8	8

Consolidated report of dispensaries—Continued.

Diagnosis.	Cotabato.		Davao.		Lanao.		Sulu.		Zamboanga.		Total.	
	Cases.	Treatments.	Cases.	Treatments.	Cases.	Treatments.	Cases.	Treatments.	Cases.	Treatments.	Cases.	Treatments.
Peritonitis			1	3							1	3
Puerperium							1	1			1	1
Pimple			1	1			7	9	9	25	17	35
Peritonsillitis									1	4	1	4
Periostitis					1	1			1	7	2	8
Pott's disease	2	2									2	2
Phrenitis									2	2	2	2
Parasitic disease (unclassified)									4	8	4	8
Pericarditis							1	1			1	1
Pyorrhea alveolaris	12	26					14	14			26	40
Psoriasis			1	1	3	5			1	2	5	8
Polypus, ear	1	3			1	2					2	5
Polypus, nasal	3	3									3	3
Polypus, (unclassified)									1	10	1	10
Pruritus			6	18							6	18
Pustule, malignant			2	4					1	3	3	7
Parotiditis			3	5							3	5
Pemphigus			2	24							2	24
Pregnancy	1	1									1	1
Polyneuritis									1	1	1	1
Phlegmon			4	10							4	10
Pediculosis			3	7							3	7
Ringworm			8	23	155	402	27	49	36	93	226	567
Rhinitis	2	2	6	13	62	119	26	51	2	12	98	197
Rheumatism	366	769	139	454	243	481	116	311	101	386	965	2,401
Rheumatism, muscular					20	43	5	5	16	66	41	114
Rheumatism, chronic									1	2	1	2
Rheumatism, articular					8	10			11	42	19	52
Rachialgia			1	1							1	1
Remittent (unclassified)									3	3	3	3
Retroversion of uterus			1	3							1	3
Scabies	1,101	2,616	23	42	626	1,998	918	1,764	122	501	2,790	6,921
Strain					1	1					1	1
Sores (unclassified)	11	31	1	2	45	79	58	129	83	240	198	481
Sprain	43	188	52	92	28	63	80	146	2	5	205	494
Stomatitis	12	31	8	14			17	19			37	64
Stomach ache	125	195			1	4	12	34	93	195	231	423
Syphilis	10	21	8	21	8	14	10	27			36	83
Septicaemia	1	19									1	19
Swollen gland					35	110			4	9	39	119
Skin diseases (unclassified)			199	506	252	428	84	241	269	796	804	1,971
Smallpox							338	1,342	13	90	351	1,432
Swelling of toe							1	7			1	7
Sarcoma	1	4									1	4
Splinter									4	7	4	7
Swelling (unclassified)									4	10	4	10
Sty	1	1							2	5	3	6
Scrofula	5	5							1	1	6	6
Spasm									3	5	3	5
Side pain (unclassified)									1	2	1	2
Scurvy	2	10									2	10
Sinusitis					1	1					1	1
Salpingitis	1	1			1	2					2	3
Splenitis			1	1							1	1
Scald					10	13	13	35	1	1	24	49
Sore nipple	1	2									1	2
Staphyloma	3	27									3	27
Sore throat	1	1									1	1
Sciatica	2	42	1	1							3	43
Splenalgia			1	4							1	4
Specific (unclassified)									2	3	2	3
Splenomegalia	1	1									1	1
Stenosis, mitral	1	11									1	11
Stone in bladder	1	1									1	1
Tenia imbricata							584	1,206			584	1,206
Tenia versicolor	298	456									298	456
Tonsillitis	28	58	7	25	8	33	20	65	2	9	65	190
Tonsillitis, follicular									1	1	1	1
Toothache	306	440			84	133	293	402	102	229	785	1,204
Typhoid fever	7	90	4	27							11	117
Trachoma	1	3	3	14	5	14	1	1	3	15	13	47
Tetanus	3	5							1	3	4	8
Teniasis							1	1			1	1

Consolidated report of dispensaries—Continued.

Diagnosis.	Cotabato.		Davao.		Lanao.		Sulu.		Zamboanga.		Total.	
	Cases.	Treatments.	Cases.	Treatments.	Cases.	Treatments.	Cases.	Treatments.	Cases.	Treatments.	Cases.	Treatments.
Tumor	------	------	30	184	------	------	1	1	34	151	65	336
Traumatism	------	------	1	4	------	------	------	------	6	20	7	24
Tuberculosis	70	239	44	152	22	63	9	15	24	82	169	551
Tuberculosis, pulmonary	------	------	22	67	14	28	29	59	6	32	71	186
Tuberculosis, peritoneal	1	24	------	------	------	------	------	------	------	------	1	24
Tuberculosis, joint	------	------	1	6	------	------	6	32	------	------	7	38
Tuberculosis, muscular	4	8	13	21	------	------	4	42	1	3	22	74
Tonsillar defect (unclassified)	------	------	------	------	3	8	------	------	------	------	3	8
Tympanitis	------	------	2	2	------	------	------	------	------	------	2	2
Toxemia intestinal	------	------	------	------	------	------	------	------	1	1	1	1
Torticollis	3	5	1	4	------	------	------	------	------	------	4	9
Tuberculosis, intestinal	4	4	------	------	------	------	------	------	------	------	4	4
Urethral calculus	1	4	------	------	------	------	------	------	------	------	1	4
Ulcer	361	1, 197	239	1, 137	656	4, 378	406	1, 235	189	904	1, 851	8, 851
Ulcer, gastric	1	1	------	------	------	------	------	------	------	------	1	1
Ulcer, tropical	------	------	------	------	70	587	1	6	3	8	74	601
Urticaria	5	5	1	3	------	------	------	------	------	------	6	8
Uncinariasis	17	142	------	------	------	------	12	12	------	------	29	154
Undetermined	430	919	1, 095	2, 321	206	486	54	98	39	91	1, 824	2, 915
Urethritis	------	------	4	9	------	------	1	1	------	------	5	10
Urine retention	------	------	------	------	------	------	2	2	------	------	2	2
Varioloid	11	84	------	------	------	------	------	------	3	8	14	92
Varicella	5	29	21	59	------	------	------	------	------	------	26	88
Venereal disease	------	------	------	------	5	21	------	------	4	19	9	40
Vesicular disease (unclassified)	------	------	------	------	------	------	2	2	------	------	2	2
Vomiting	------	------	------	------	1	1	------	------	------	------	1	1
Vaccinia	3	9	------	------	------	------	------	------	------	------	3	9
Verruca	------	------	------	------	------	------	------	------	4	9	4	9
Worms (unclassified)	456	638	3	5	50	90	183	295	5	14	697	1, 042
Worms, intestinal	2, 320	2, 554	------	------	368	532	------	------	33	36	2, 721	3, 122
Wounds (unclassified)	1, 647	7, 055	1, 449	4, 780	263	922	1, 475	4, 847	329	1, 224	5, 168	18, 828
Wound, infected	------	------	------	------	416	1, 627	------	------	190	646	606	2, 273
Wound, incised	------	------	------	------	191	551	------	------	87	360	278	911
Wound, lacerated	------	------	------	------	187	595	------	------	103	394	290	989
Wound, punctured	------	------	------	------	44	447	------	------	5	9	49	456
Wound, contused	18	42	26	73	90	325	28	51	65	238	227	729
Wound, crushed	------	------	------	------	54	405	1	5	7	45	62	455
Wound, gunshot	------	------	------	------	------	------	------	------	2	2	2	2
Wound, gangrene	------	------	------	------	------	------	------	------	1	2	1	2
Whooping cough	------	------	------	------	------	------	------	------	18	33	18	33
Wart	1	2	------	------	------	------	6	10	------	------	7	12
Yaws	1, 808	4, 818	31	166	8	120	227	1, 074	58	281	2, 132	6, 459
Total	25, 898	57, 355	9, 222	25, 445	14, 356	89, 748	17, 425	37, 007	6, 143	18, 726	73, 044	178, 281

XII. SCHOOL CHILDREN.

Instructions regarding the inspection of school children were sent to the medical officers of the division during the latter part of the year. The physical examination could only be conducted in the provincial capitals and principal towns on account of lack of personnel, and the distances they have to travel making the examination of children in the small villages and rancherias very difficult and almost impracticable. About 50 per cent of the school children have more or less chronic defects and proper treatment has been instituted whenever possible. The common defects of school children are dental caries, chronic affection of the tonsils, skin diseases, and ocular and optical defects.

XIII. WATER SUPPLIES.

Although drinking water can not always be held responsible for the dissemination of the so-called water-borne diseases, yet the importance of having an adequate water supply for any community can not be overlooked. During 1916, a system of water works was built for the city of Zamboanga placing the dam in the upper stream of the river of Pasonanca with the reservoir at the latter place. The system is very similar to that of the city of Cebu as the work was entrusted to Supervising Engineer H. F. Cameron to whose initiative the Cebu water works was due. While the dam was in process of construction a temporary one was built in the lower part of the river from which the present supply of the city comes.

The following is an extract from the report of the Zamboanga Laboratory on the biological examinations of the water at both dams:

Temporary dam.

Bacterial count per c. c.	3,600
B. coli	+
Ciliates, flagellates	+
Ameba	+
B. typhosus	—

This water is not safe to drink without previous physical or chemical treatment.

Permanent dam.

Bacterial count per c. c.	2,500
Fermentation test	+
B. coli	—
B. typhosus	—
Flagellates and ciliates	+
Ameba	—

The fact should be mentioned that when this sample was taken, the water was turbid on account of rain.

The system of water works for the city of Jolo was begun during 1916, but the municipal health officer of that city pointed out the presence of Moro graves near the proposed dam and a committee composed of Drs. M. M. Gallardo, District Health Officer of Sulu; S. Y. Orosa, Municipal Health Officer of Jolo; and M. Baltazar, Department Bacteriologist, was appointed and the following is the résumé of their report:

1. The two cemeteries draining into the Gandasuling spring should be closed.
2. Six months must have elapsed from date of closure before the water is safe to use, that is in March, 1917.
3. The Tubig Lian Creek should be diverted from the Gandasuling spring.
4. A concrete wall should be constructed surrounding the main body of

water of the Gandasuling spring at least one-half meter high and 30 centimeters thick.

5. The land outside the proposed concrete wall should be filled in to divert surface drainage away from the wall or spring.
6. A minimum of 100 meters of ground surrounding the proposed concrete wall should be reserved.
7. Destruction of all vegetation in the proposed reservation, with the exception of grass.

The boring of wells as sources of pure water supply was initiated in various settlements of Sulu with the coöperation of the provincial board and the work has been successful even in places where several attempts on the part of the Bureau of Public Works' agents had failed. These sources of drinking water supply have been a very important factor in reducing the incidence of dysentery in Sulu.

The question of pure water supply is of paramount importance for some of the towns in this Department and it is expected that the provincial boards will set aside funds for the construction of artesian wells.

XIV. CEMETERIES.

The application of Act No. 1458 re cemeteries has been initiated during 1915 and 1916 and its provisions enforced whenever local conditions warranted. The rules and regulations regarding cemeteries could not be rigidly enforced among the non-Christians for they are sometimes incompatible with the habits, customs, and religious precepts of these people, and in view of the policy of attraction and tolerance adopted by the Department Government, we have to be more lenient with them in this respect. At present there are 74 cemeteries approved by this office upon the recommendation of the district health officers. Municipal cemeteries have been established during the year in many municipalities and they will obviate the difficulties occurring in connection with sectarian cemeteries.

XV. MUNICIPAL SANITATION.

In general, the sanitary condition of the municipalities, organized and otherwise, is fairly satisfactory. Ordinances regarding proper disposal of excreta have been adopted. The pail system is used in almost all organized municipalities and where this system could not be applied to a community the use of pits provided with fly-proof seats has been adopted. The rather low percentage of incidence of intestinal parasitism in the city of Zamboanga may be ascribed to the system of disposal of sewage. Public convenience stations have been established in many municipalities in places where the neighborhood is unable to defray the expenses of collection of the excrementious matter.

XVI. INFANT MORTALITY.

Although no exact data could be gathered in connection with infant mortality in this Department, it is believed to be as high as in the northern provinces, if not higher. The Mohammedan Filipino is a prolific race and the practice of polygamy should favor the rapid increase of population. And the fact that the whole of Mindanao and Sulu, with an area only a little less than that of the Island of Luzon, is inhabited only by less than half a million non-Christian people, can be attributed to an excessive mortality in which the newly born play no small part. During 1916, the services of district nurses and midwives have been secured for almost every province and they have rendered very valuable help in lessening the risks to which mother and baby are exposed in the hands of the untrained *comadrona.* The regulations regarding the practice of midwifery are enforced in the principal cities and towns of the Department.

The following is a brief summary of the work done by the district nurses among the women and children in private residences in the *población* and in the dispensary of Zamboanga for the last half of the year:

Summary.

A. Total number of women given instruction during pregnancy		180
Number of women attended during labor:		
1. Primiparas	14	
2. Multiparas	38	
	——	52
Number of women refusing assistance during labor		0
B. Cases attended during labor:		
1. Average age		25
2. Average duration of pregnancy ... months		9
3. Average duration of labor ... hours		9
4. Kind of presentation—		
(*a*) Head		48
(*b*) Breech		1
(*c*) Transverse		1
(*d*) Foot		2
8. Average length of time before the expulsion of the secundines ... minutes		20
6. Fetus—		
(*a*) Alive—		
Male		24
Female		20
(*b*) Premature—		
Male		1
Female		0
(*c*) Abortion—		
Male		1
Female		0

Summary—Continued.

6. Fetus—Continued.	
(*d*) Still born—	
Male	3
Female	2
(*e*) Twins	1
7. Complications:	
(*a*) Cases with hemorrhage	4
(*b*) Cases with infection	0
8. Average duration of convalescence in days	10
9. Number of deaths among the children of cases attended (excluding still born)	1
10. Total number of visits during pregnancy	340
11. Total number of visits after labor	780
12. Average number of visits to each patient during pregnancy and after labor	21
C. Number of women at present receiving instruction on hygiene of pregnancy	140
D. Number of mothers at present receiving instruction on nursing and care of infants and young children:	
1. In the dispensary	4
2. In their houses	20
E. Total number attended and given instruction since July, 1916:	
1. Mothers	210
2. Children	60

XVII. NEW ACTIVITIES FOR 1917.

The activities contemplated for the year 1917 are—

1. Completion of a hospital in Zamboanga for communicable diseases, which is now in process of construction.
2. One tuberculosis ward for the Lanao Public Hospital.
3. One contagious disease hospital for Jolo.
4. Ten field dispensaries.
5. Clinical laboratories at Davao and Baganga.
6. Establishment of new dispensaries and sick wards within the limits of our appropriation.

CONCLUSION.

This Office is in accord with the Department Government that the non-Christian population should merit most of our attention and that our measures be so introduced that no friction would result between our personnel and the Moros. The utmost care and consideration is exercised before adopting a sanitary measure among the Mohammedan brothers in order not to stir up active opposition, and to gradually overcome the passive resistance that is always present when an innovation is introduced into a community. Thanks to diligent and persistent efforts much progress has been effected in our work and all our activities in general have been more or less successful. The extension of modern sanitation among the Moros although gradual is showing gratifying results and it is hoped and expected that, with the help of our present and future endeavors, the morbidity rates in this region will be greatly reduced.

The epidemics of cholera and smallpox have impaired the health conditions in this Department during the past year (1916) but it is expected that they will be under control in a short time, and when a systematic vaccination for smallpox is completed in all the provinces, this disease will no longer appear in an epidemic form. Cholera which is endemic in the tropics keeps us on the alert, but the situation is now under control and at the present writing this division is entirely free from this disease.

The Department hospitals have been in working order for over a year and have established a reputation of their own; and with the improvements contemplated during 1917, it is expected that the efficiency of our hospitals, dispensaries and other activities will be greatly increased.

REPORT OF THE OFFICE OF SANITARY ENGINEERING.

[EDWARD L. BARBER, Sanitary Engineer.]

The duties of the above office are in part or approximately as follows:

1. Sanitary supervision of building construction, city of Manila.
2. Execution and enforcement of structural sanitary orders, city of Manila.
3. Plumbing inspection, city of Manila.
4. Sanitary projects, provincial.
5. Drafting department.

MANILA.

A tabulation of routine work performed in the city of Manila, and provinces is appended. During the year 435 sanitary orders were issued, building projects to the number of 2,206 were acted upon, 930 permits were issued for plumbing to cost ₱217,882.45, and 306 premises were connected to the sanitary sewer.

On February 15, 1916, Mr. George H. Guerdrum, Sanitary Engineer, left for the United States on leave of absence, from which time until July 31, 1916, the undersigned was in charge of the office. Upon the retirement of Mr. Guerdrum (July 31, 1916) the undersigned was appointed sanitary engineer for the city of Manila and the Philippine Islands, taking effect August 1, 1916.

The erection of temporary public convenience stations in different parts of the city in the recent outbreak of cholera has demonstrated their need in the densely populated districts of the poorer classes. Funds will be made available for the coming year for a number of permanent modern public comfort stations, laundries, and baths. There is no question about the necessity for such legislation and it is obvious that the providing of such toilet, bath, and laundry facilities, even though of a temporary character, will do much for the conservation of the health of the poorer classes.

In the campaign for a cleaner city, this office has caused to be filled approximately 100,000 square meters of low land, marked results of which can be seen in what is known as the Dagupan fill, district of Tondo, where new street lines and drainage has been constructed and houses that formerly were inaccessible are now placed upon high healthy sanitary sites made available by this new fill. It is gratifying to report that no opposition was experienced in the enforcement of these sanitary orders. This work will be continued until completed.

While perhaps not equaling in volume the record of last year, building operations and sewer connections have been conducted upon a fairly large scale in spite of the prevailing high price of materials.

The results obtained in the Manila courts with reference to prosecutions for illegal construction of light material houses in strong material districts were not satisfactory.

The small two-peso fines given tended to encourage the defendants instead of discouraging them. Forty-three cases of illegal constructions were reported to the city engineer, seven of which were completed in accordance with the regulations.

This office has done considerable work with the city engineer in the preparation of plans and estimates of the proposed model sanitary barrio and a report was submitted to the Municipal Board making recommendations. These recommendations were approved in part and sufficient money was made available to commence the project and there remains only the selection of a suitable site.

During the past year, this office has supervised the work of the two engineers on the provincial sanitary commissions.

Plans were prepared for the remodeling of a coast-guard cutter into a hospital ship, and the work of reconstruction is nearing completion.

PROVINCIAL.

In the provinces the following were some of the principal projects handled:

Designing and the construction of additional buildings, sewage disposal systems, etc.

Antipolo, Rizal.—Plans for modified Antipolo system were prepared. An inspection trip was made to Antipolo with reference to installation of the modified system for marsh land.

Baguio, Benguet.—Imhoff tank, designed. (*b*) An Inspection trip was made to Baguio with reference to the construction of the new Imhoff tank.

Balayan, Batangas.—An inspection trip was made to Balayan, with reference to revising sewage disposal.

Canlubang, Laguna.—Imhoff tanks were designed for model barrios to be constructed on the sugar estate. Inspection trips were made to Canlubang with reference to new proposed sewage disposal.

Culion Island.—(*a*) Quarters: Sisters of Charity, completed. (*b*) Pavilion: Parents of nonleper children, completed. (*c*) Christian chapel. (*d*) Imhoff tank. (*e*) An inspection trip was made to Culion for consultation with regard to buildings in process of construction.

Cuyo Island.—Plans were designed for Hospital at Cuyo.

Fort McKinley, Rizal.—Imhoff tanks. Various inspections were made to Fort Wm. McKinley in connection with the new sewage disposal plants.

Iloilo, Iloilo.—Plan of Imhoff tank for intermediate and primary schools at Iloilo, was designed and forwarded to the Bureau of Public Works.

Los Baños, Laguna.—An inspection trip was made to Los Baños with reference to water supply system for that town.

Lucena, Tayabas.—An inspection trip was made to Lucena with reference to toilet facilities of the railroad station.

Mariveles, Bataan.—Various inspections were made to Mariveles in connection with the model sanitary house.

Navotas, Rizal.—Map of municipality of Navotas was prepared. Plans were prepared for model house.

Pampanga Province.—A general inspection trip was made to Pampanga for the purpose of making an examination of the public toilet system.

Romblon Island.—Plan for hospital was prepared.

San Pablo, Laguna.—Inspection trips were made to San Pablo with reference to water supply.

Zamboanga, Mindanao.—Individual toilet system for houses was designed to meet the conditions existing in Zamboanga.

OFFICE OF SANITARY ENGINEERING.

Statistical information by districts.

[Manila, P. I., only. Fiscal year ended December, 1916.]

	Health districts.					
	No. 1.	No. 2.	No. 4.	No. 5.	No. 6.	Total.
Orders pending Dec. 31, 1915	60	107	32	14	6	219
Orders issued:						
Minor orders	20	25	7	21	13	86
Sewer orders	23	124	6	32	1	186
Vacating orders	18	109		23		150
Filling orders	2			6	5	13
Total	63	258	13	82	19	435
Grand total	123	365	45	96	25	654
Orders completed:						
Minor orders	21	19	6	14	3	63
Sewer orders	32	96	17	4	3	152
Vacating orders	16	61	2	24		103
Filling orders						
Total	69	176	25	42	6	318
Orders cancelled:						
Minor orders			1	1	4	6
Sewer orders	13	11	2			26
Vacating orders	2	11	3			16
Filling orders						
Total	15	22	6	1	4	48
Grand total	84	198	31	43	10	366
Orders pending Dec. 31, 1916:						
Minor orders	8	10	3	10	9	40
Sewer orders	28	96	11	32	1	168
Vacating orders	1	61		5		67
Filling orders	2			6	5	13
Total	39	167	14	53	15	288

Statistical information by quarters.

[Manila, P. I., only. Fiscal year ended December, 1916.]

	Jan.-Mar.	Apr.-June.	July-Sept.	Oct.-Dec.	Total.
Orders pending Dec. 31, 1915					219
Orders issued:					
Minor orders	17	16	37	16	86
Sewer orders	47	66	52	21	186
Vacating order	10	36	40	64	150
Filling orders				13	13
Total	74	118	129	114	435
Grand total					654
Orders completed:					
Minor orders	8	17	21	17	63
Sewer orders	33	28	50	41	152
Vacating orders	18	7	26	52	103
Filling orders					
Total	59	52	97	110	318
Orders cancelled:					
Minor orders		2	1	3	6
Sewer orders	11	3	4	8	26
Vacating orders	14		2		16
Filling orders					
Total	25	5	7	11	48
Orders pending Dec. 31, 1916:					
Minor orders					40
Sewer orders					168
Vacating orders					67
Filling orders					13
Total					288

Statistical information by districts.

[Manila, P. I., only. Fiscal year ended December, 1916.]

	Health districts.					
	Intramuros.	Meisic.	Sampaloc.	Tondo.	Paco.	Total.
Strong material plans approved: New buildings including additions and alterations	92	170	84	69	46	461
Strong material plans cancelled		1	1			2
Permits for minor building construction:						
Approved	79	148	64	27	29	347
Disapproved	37	73	26	23	9	168
New buildings completed	53	97	47	46	32	275
Light and mixed material structures:						
Permits approved			158	496	115	769
Permits disapproved			34	104	46	184
Total number of building projects passed upon	261	489	414	765	277	2,206

NOTE.—Forty-three cases of illegal constructions were reported to the city engineer, seven of which were completed according to ordinances.

Statistical information by quarters.

[Manila, P. I., only. Fiscal year ended December, 1916.]

	Jan.-Mar.	Apr.-June.	July-Sept.	Oct.-Dec.	Total.
Strong material plans approved: New buildings including additions and alterations	120	121	125	95	461
Strong material plans cancelled	1		1		2
Permits for minor building construction:					
Approved	72	103	82	90	347
Disapproved	42	54	48	24	168
New buildings completed	75	60	83	57	275
Light and mixed material structures:					
Permits approved	193	223	156	197	769
Permits disapproved	71	35	54	24	184
Total number of building projects passed upon	574	596	549	487	2,206

Statistical information by districts.

[Manila, P. I., only. Fiscal year ended December, 1916.]

	Health districts.					
	Intramuros.	Meisic.	Sampaloc.	Tondo.	Paco.	Total.
Plumbing permits issued	191	422	134	117	66	930
Plumbing projects completed	195	396	133	86	54	864
Premises connected to the sanitary sewer to Jan. 1, 1916	1,213	1,956	723	267	268	4,427
Premises connected Jan. 1, 1916, to Dec. 31, 1916	62	168	37	27	12	306
Total Dec. 31, 1916	1,275	2,124	760	294	280	4,733

Statistical information by quarters.

[Manila, P. I., only. Fiscal year ended December, 1916.]

	Jan.-Mar.	Apr.-June.	July-Sept.	Oct.-Dec.	Total.
Plumbing permits issued	242	189	260	239	930
Plumbing projects completed	242	188	231	203	864
Premises connected to the sanitary sewer to Jan. 1, 1916					4,427
Premises connected Jan. 1, 1916, to Dec. 31, 1916	80	79	83	64	306
Total Dec. 31, 1916	80	79	83	64	4,733

Statistical information by districts.

[Manila, P. I., only. Fiscal year ended December, 1916.]

Health Districts.	Prosecutions.		
	Convictions.	Dismissals.	Amount of fines.
Intramuros			
Meisic	2	1	₱8.00
Sampaloc	1	1	15.00
Tondo	1		2.00
Paco	3		6.00
Total	7	2	31.00

Statistical information by quarters.

[Manila, P. I., only. Fiscal year ended December, 1916.]

Quarters.	Prosecutions.		
	Convictions.	Dismissals.	Amount of fines.
January-March	2	1	₱20.00
April-June	1		3.00
July-September	1	1	2.00
October-December	3		6.00
Total	7	2	31.00

Drafting projects.

[Annual report for the fiscal year 1916.]

1, 23. Portfolio Map (Manila), 63 per cent completed.
6. Blue Printing, 676 copies made (Intervals).
43. Work Report, completed at the end of every month.
266. Lettering Nurses' Certificates, 75 certificates completed.
289. Reinforcing and Mounting Maps, 14 maps reinforced and mounted.
301. Reducing Maps of Culion, 70 per cent completed.
304. Map of Manila showing lowland and Health Districts boundaries, 100 per cent completed.
305. Sketches for Health Bulletins, about 12 sketches.
306. Large seals for Carnival, 100 per cent completed.
307. Making Stencils, 100 per cent completed.
308. Preliminary Sketch of Romblon Hospital, 100 per cent completed.
309. Redrawing plan of modified Antipolo system, 100 per cent completed.
310. Diagram showing comparative statement of sick and death rates, 100 per cent completed.
311. Estimate of Building materials for the Culion Leper Colony, new proposed buildings, for two buildings.
312. Alteration to project No. 310, 100 per cent completed.
313. Alteration to project No. 293, (dog muzzle) 100 per cent completed.
314. Tracing floor plan of standard 3-room school building, 100 per cent completed.
315. Sketch of a drafting table, 100 per cent completed.
316. Notification Card, 100 per cent completed.
317. Modified Antipolo system for marsh land, 100 per cent completed.
318. Standard Provincial Toilets with Imhoff and Septic Tanks, 4 plans completed, with imhoff and septic tanks 100 per cent completed.
319. Doors and windows for the Day Clinic and Ward Buildings, Culion Leper Colony, 100 per cent completed.
320. Sketch of Umbuyan Fish Drying Establishment, 100 per cent completed.
321. Map of Municipality of Navotas, Province of Rizal, 100 per cent completed.
322. Standard Hospital, 100 per cent completed.

323. Doors and Windows for Hospital Annex, Culion Leper Colony, 100 per cent completed.
324. Maximum and minimum temperature taken daily from January, 1911, (continuous) 6 rolls of cross section paper at 50 yards each being completed.
325. Plan of Proposed Christian Chapel, Culion Leper Colony, 100 per cent completed.
326. Plan of Imhoff Tank for Intermediate and Primary schools, Iloilo, 100 per cent completed.
327. Plan of Imhoff Tank for Culion, 100 per cent completed.
328. Imhoff Tank for Sugar Estate, Canlubang, Calamba, 100 per cent completed.
329. Hospital for Cuyo Islands, 100 per cent completed.
330. Organization Diagram of Philippine Health Service, 100 per cent completed.
331. Modified Septic Tank with Filter Bed, 100 per cent completed.
332. Imhoff tank for Baguio, Benguet, 100 per cent completed.
333. Model House with addition for Navotas, 100 per cent completed.
334. Filling Plans, being done at intervals.
335. Proposed Sanitary Tanque Barrio, 100 per cent completed.
336. Tape Measurements and sketch of Accesoria Nos. 711, 713 Calle Lepanto, 100 per cent completed.
337. Alteration to Project No. 318, 100 per cent completed.
338. New Sanitary Sewer Maps, 100 per cent completed.
339. Sketch of lowland for filling in Tondo, 100 per cent completed.
340. Plan of Malecon Drive Sunken Grounds (Municipal Golf Course), 100 per cent completed.
341. Additional Plan for Standard Hospital, 100 per cent completed.
342. Drawing of a Bottle, 100 per cent completed.
343. Drawings for the Municipal Golf Course, 100 per cent completed
344. Drawing for Cholera Campaign, 10 sheets completed.
345. Diagram showing cholera cases and carriers, 1 roll almost completed, 50 yards long (continuous).
346. Measuring and Sketching Accesoria, Calle Barcelona Nos. 517–529, 100 per cent completed.
347. Sketch of lowland for filling Calle Mayhaligue off Calle Magdalena, 100 per cent completed.
349. Alteration to Project No. 318, 100 per cent completed.
350. Plan of Fish Drier, 100 per cent completed.
351. Model of Nurse Certificates, 100 per cent completed.
352. Plan of Kiln for Burning Pottery, 100 per cent completed.
353. Survey of City Low Lands, 1 map finished.
354. Sketch of First and Second Floor Plans of Accesoria Nos. 906–912 Calle Juan Luna, 100 per cent completed.
355. Redrawing plan of Garbage Crematory, 100 per cent completed.
356. Alteration to Project No. 327, 100 per cent completed.
357. Ticket Booth for the Municipal Golf Course, 100 per cent completed.
358. Standard Provincial Toilets (concrete structure), 100 per cent completed.
359. Map of the city of Manila showing public midden sheds, 100 per cent completed.
360. Realteration to projects Nos. 349 and 358 (Standard Provincial Toilets), 100 per cent completed.

REPORT OF THE OFFICE OF HYGIENE AND INDUSTRIAL DEVELOPMENT.

[MAMERTO TIANCO, Acting Chief of Office.]

DATE OF CREATION AND PURPOSE.

This office was created on the 16th day of July of the year covering this report and its mission is to place into effect in each town the recommendations of the sanitary commissions and has for its definite aim:

1. The increase of population through the reduction of infant mortality and the reduction of mortality in general.
2. The development of towns along lines which mean their permanent hygienic and economic improvement.
3. The development of industries actual or potential having connection with hygiene and sanitation.

CAMPAIGN AGAINST INFANT MORTALITY AND MORTALITY IN GENERAL THROUGH THE ESTABLISHMENT OF HOUSEHOLD VEGETABLE GARDENS.

One of the causes of morbidity and mortality among children as reported by the sanitary commissions is improper feeding by infected breast milk or through the inability of the mothers to nurse their babies. This and the known fact that most Filipinos are not vitally strong suggested the idea of finding a way of correcting these deficiencies. It was known that the diet of the average Filipino consists mainly of rice, a little fish and meat and very few vegetables. The reason why vegetables are not extensively used was investigated. Several markets were visited and it was concluded that sufficient quantities of vegetables were not always available and that prices are generally too high. It was then planned to make a campaign for the establishment of household vegetable gardens in every home of the Islands. The purpose of the house vegetable garden is to induce the people to eat more legumes which when added to the ordinary Filipino diet will provide all the essentials of a well balanced diet, thus increasing the vitality of parents and their resulting children and enabling mothers to nurse their babies as otherwise they would not be able to do, thus effecting an important reduction in infant mortality. In order to obtain the necessary materials for carrying out this plan, the Bureau of Agriculture was approached and requested to give their help. The Bureau of Agriculture coöperated by making the sketch of the garden plan and promising that seeds would be given free at the proper season and also furnishing the instructions for the planting of the seeds and for the care that should be taken once planted.

The sketch of the plan is as follows:

Garden plan.

13 meters.	1	Radishes, drills	Mustard, drills	40-centimeter rows.
	2	Calabasa		
	3	Upo		
	4	Pechay	Lettuce	
	5	Tomatoes, hills, 75 centimeters apart		75 centimeters.
	6	New Era Cowpeas, drills		75 centimeters.
	7	New Era Cowpeas, drills		60 centimeters.
	8	Corn, hills, 1 meter apart		1 meter.
	9	Canadian Wonder Beans, drills		1 meter.
	10	Canadian Wonder Beans, drills		60-centimeter rows.
	11	Peppers, 50 centimeters apart	Okra, 60 centimeters.	
	12	Eggplant, 60 centimeters apart		
	13	Mongos		
	14	Cucumbers, Indian variety, hills 1.5 meters		1.5 meters.
	15	Sweet potatoes, 50 centimeters apart in row		1.5 meters.
	16	Sweet potatoes, 50 centimeters apart in row		1 meter.
				1 meter.

The row may be extended to any desired length to suit conditions.

The food value of each of the vegetables appearing in this garden plan is as follows:

	Moisture.	Ether extract.	Protein n by 6.25.	Ash.	Crude fiber.	Carbohydrate (by difference).	Theoretical calories per kilogram.
Radishes	94.14	0.16	0.82	0.69	0.55	3.64	197.7
Mustard leaves	91.30	.31	2.06	1.10	.80	4.43	294.9
Calabasa {leaves	89.45	.34	4.07	1.87	1.16	3.11	326.0
fruits	87.20	.43	1.83	1.01	.70	9.33	477.00
Upo, fruit	95.44	.09	.50	.37	.26	3.34	165.8
Pechay	92.97	.34	---------	1.26	.79	4.64	221.9
Lettuce	94.7	.3	.9	.7	.5	2.9	[a] 85
Tomatoes, fruit	94.32	.23	.99	.62	.64	3.20	193.2
Peas	86.75	.18	2.65	.90	2.03	7.49	432.4
Corn	75.4	1.0	2.3	.5	1.8	19	445
Beans	15.07	1.70	18.09	3.80	4.28	57.06	3,239.3
Peppers	84.63	.70	5.48	2.25	1.33	5.61	461.2
Eggplant	90.98	.45	1.07	.54	.82	6.14	337.5
Mongoes	9.21	.88	18.30	4.23	4.89	62.49	3,394.2
Cucumbers	94.14	.19	.52	.46	.30	2.39	137.0
Sweet potatoes	71.20	.52	.65	.91	1.35	23.37	1,033.2

[a] Per pound.

The instructions for planting were translated into Tagalog, Spanish, Bicol, Pangasinan, Pampango, Ilocano, Cebu Visayan, and Panay Visayan, with the help of the employees of the Bureau of Agriculture.

To spread the idea of establishing home vegetable gardens among the people a circular letter was sent to all District Health Officers. The wording of this circular is as follows:

> It is a known fact that the diet of the poorer Filipinos is insufficient either in variety or quantity. There may possibly always be a sufficiency of carbohydrates, but there is practically never enough of protein or fats in the diet. The insufficiency in quantity probably exists only during times of long drouth or other intense weather conditions resulting in large losses of crops, but the insufficiency in variety exists almost always.
>
> This insufficiency in diet, both in quantity and quality, is directly responsible in the vast majority of cases for the poor physical condition of Filipina mothers, who are, therefore, unable to provide their babies with sufficient or proper breast milk. As the result, the babies are underfed, poorly nourished and weak, and have so little resistance that almost any slight illness leads to complications and finally, death.
>
> If, therefore, we can provide a proper diet, or take steps which will lead to an increased and improved diet for the poorer Filipinos, we will not only improve their physical condition, but will indirectly provide a better quality and increased quantity of breast milk for infants, thus increasing their strength, resistence, and chances for life. In other words, we will be attacking the problem of mortality, both adult and infant, and aiding in another way to increase the population.
>
> It has been decided, therefore, to endeavor to establish vegetable gardens in as many homes in the Philippines as possible, such gardens to contain foods which will furnish all the elements necessary for a well-nourished body. Attached hereto is a plan for a household garden showing the general character of the vegetables supplied, as well as the method of their planting. It will be noted that especial stress is laid upon legumes, which furnish the protein element.

You are directed to take up, at once, with all municipal health officers, the matter of securing as many promises as possible from the people, so that, next October when the new planting season begins, they will establish a household garden, *provided the seeds, plan, and full instructions are furnished them free of charge.* Each promise should be recorded on a blank form like the copy submitted herewith, which forms should be sent to this office at once, or by not later than October 20. In every case where the names are received here at once, it will be possible to furnish a few of each of the following fruit trees, or such of them as may be desired:

Mango, Lanzones, Rimas, Papayas, Cafe, Cacao.

If, however, the lists are not received until October 20, it will be too late to send fruit trees.

In view of the fact that this is a matter of direct and important bearing upon the general mortality, and of indirect bearing upon the increase in population which is so vital to the future of the Philippines, you should also take up with the provincial governor the matter of interesting all provincial and municipal officials in this campaign, to secure as many promises as possible from people that they will, next October, establish vegetable gardens. Please make it plain that the seeds, plan, and instructions are free.

Please see that the blank forms with the names and addresses of persons from whom promises are secured are sent to this office at once if possible, and, at any rate, by not later than October 20, in order that arrangements may be completed to send the seeds, plans, and instructions in good time.

The application form mentioned in the above circular is given below:

Fruits trees which may be delivered at once: Mango, rimas, lanzones, coffee, cacao.	Names of persons who have promised to establish household vegetable gardens, provided seeds, plan, and instructions are furnished free of charge.		
Name.	Address.	Signature.	Fruit trees desired.

This office also carried out this campaign by explaining the idea to every person whenever favorable opportunity presented and in addition it was used as a subject matter for organizing women's clubs and adopted as one of the means which the said clubs could employ in the start of their work and campaign against infant mortality. It is very interesting to know that not a single person before whom the idea of the establishment of household vegetable gardens was placed, disapproved its main purpose, and although in some districts is was not readily put into practice, in most places the subject was received with great enthusiasm. The district health officer of Tarlac, to obtain as many promises as possible within the prescribed time, managed to obtain from the provincial board of Tarlac a small appropriation for awarding prizes to the person—

1. Who submits before October 15 the greatest list of persons who have promised to establish household vegetable gardens, and
2. Who has secured on December 15, 1916, a successful establishment of the greatest number of such gardens.

The above idea of the District Health Officer of Tarlac met the approval of this office and accordingly the matter was taken up with the Executive Bureau in order to induce other provincial boards to set aside small sums for home-gardening prizes and the following circular was issued by that office to all provincial boards:

Subject: Home vegetable garden-encouragement of.

[Provincial circular (unnumbered).]

October 17, 1916

The Philippine Health Service, in conjuction with the Bureau of Education, has started a campaign against infant mortality through the improvement of the health of the mother and of the family generally by providing a properly balanced diet. In order to accomplish this purpose, it is desirable that a vegetable garden be established in every home in the Islands, which should be able to provide all of the essentials of a varied diet.

This office is very heartily in accord with this plan of the Philippine Health Service, and, as in the case of garden days and food demonstrations, regarding which a circular was issued on August 15, 1916, it is hoped that financial assistance and moral support from the provincial boards will not be lacking.

It is believed that a small appropriation for prizes to be distributed under the supervision of the health officials will do much to stimulate greater enthusiasm among the people and thus bring about the desired end. For this reason, this office will gladly approve any reasonable appropriation that may be made by the provincial boards for the aforementioned purpose.

(Sgd.) JAIME C. DE VEYRA,
Executive Secretary.

The returns from this campaign exceeded our expectation and its extent may be judged from the fact that 14,398 promises were secured and received. The Bureau of Agriculture considering that such a big demand was out of proportion to their propagation facilities requested that action be taken to stop securing promises. It was however too late when this request was received, so to remedy the situation it was decided to instruct our representatives in the provinces to see that seeds were distributed only to those who had in some way shown that results might be expected or who had already prepared beds. The seeds from the United States which were intended for distribution in the early part of November were not received by the Bureau of Agriculture on time, as expected, and consequently the applicants did not receive them before the end of the year.

The number of promises received from each province is given herewith in detail:

Albay	401
Agusan	91
Ambos Camarines	259
Antique	1,206
Batangas	325
Bataan	83
Bohol	1,165
Bukidnon	26
Bulacan	509
Capiz	409
Cavite	277
Ilocos Norte	483
Ilocos Sur	855
La Laguna	452
La Union	595
Leyte	11
Mindoro	16
Misamis	414
Mountain Province	501
Nueva Ecija	289
Nueva Vizcaya	190
Oriental Negros	138
Palawan	26
Pampanga	845
Pangasinan	1,489
Rizal	461
Sorsogon	189
Surigao	212
Tarlac	2,218
Tayabas	253
Zambales	10
Total	14,398

The importance of this garden plan makes itself plain when it is considered that it helps to solve the problem of how the Filipinos may grow physically strong and that it creates a sentiment for better and more methodical living among the people.

It is a fact that the Filipinos are not vitally strong and therefore have very little resistance against sickness. It is therefore necessary that their vitality should be increased in order to withstand any extraordinary stress that emergencies or unforeseen circumstances may at any time place upon their bodily frame. To keep persons in good health and strong, they must be well fed and because vitality is not acquired in the space of a moment, it is also clear that proper dietary methods should at all times be observed. Therefore, this campaign should be continued and it is not improbable that in the course of 10 years its beneficial effect will be manifest.

WOMEN'S CLUBS.

One of the means which this office considered to be an efficient factor in placing into practice its aims and desires, is the establishment of women's clubs in every town of the Archipelago. The object of the women's clubs may be briefly outlined as follows: To support and work actively for the betterment of the people and country through the improvement of health and reduction of mortality, especially the infant mortality.

To give an idea of how these associations were organized the circular letter which was used in the case of the formation of the women's clubs of Biñang is herewith given:

MY DEAR ....

In the course of the work of the Philippine Health Service, it has been found that about one-half of all the babies born in the Philippine Islands die before they reach one year of age. It is not necessary for me to comment upon this dreadful sacrifice of babies who, although entitled to all the tenderness and care which their parents can possibly give them, are doomed to continous suffering during the few days of life allowed them, and to early extinction. This is a condition of affairs greatly prejudicial to the interest and future progress of our people and which we, as Filipino women and mothers, must not allow to continue. The women of some of the towns in the Philippine Islands have already begun work against this problem and are achieving success. For instance, during the past year the women of Pasig have demonstrated how important a factor the women of a town may be. Through their efforts the lives of more than 100 babies have been saved in less than a year. There is no doubt whatever but that the women of Biñang are equally as patriotic and capable, and if possible, we would like to do even better than the women of Pasig have done.

IT IS BELIEVED WE CAN.

It has been found that a great many Filipina mothers are so poorly nourished that not only are they sick and weak, but they are not able to furnish their babies sufficient or proper breast milk. As the result, the baby is underfed and weak, and has so little resistance that almost any slight illness results in complications and finally death. You will see, then, that the troubles of the baby begin with its mother, and, if we can improve the health and strength of the mother, we can do much toward improving the condition of the baby and saving its life.

The question has been asked, how we, the women of Biñang can improve the condition of the mother, and on investigation it has been found that

WE CAN DO IT

with but little trouble, *and no expense.*

The plan is this:

To establish in every home where it is possible a vegetable garden containing *foods which furnish all the elements necessary for a well-nourished body.* If we do this, it means that in every home where such a garden is established there will be available to the family at least some food with which to maintain itself in health and strength. All that is asked of the family is, a small amount of trouble in planting and caring for the garden.

The seeds will be furnished free of charge by the Bureau of Agriculture, as well as full instructions in Tagalog, how to plant and care for the vegetables.

The help of every woman in Biñang is necessary, and we are counting upon you. It will be appreciated therefore if you will be present at my house at 2:30 p. m., next Sunday, to organize the women's club of Biñang for the purpose of working against the infant mortality and for other movements for the progress and betterment of the town and country.

Very sincerely yours.

....

With the coöperation of the district health officer, employees of the Bureau of Education, members of the Circulo Femenil de Manila and other patriotic persons, many women's clubs have been organized and the following 57 clubs are now known to exist in the Islands:

Provinces and towns.	Names of the clubs.
Agusan:	
Butuan	Butuan Women's Association.
Batangas:	
Batangas	Circulo Femenil de Batangas.
Bohol:	
Antequera	Antequera Women's Club.
Bilar	Bilar Women's Club.
Cortes	Cortes Women's Club.
Duero	Duero Women's Club.
Garcia Hernandez	Garcia Women's Club.
Guindulman	Guindulman Women's Club.
Jagna	Jagna Women's Club.
Jetafe	Jetafe Women's Club.
Maribojoc	Maribojoc Women's Club.
Tagbilaran	Tagbilaran Women's Club.
Talibon	Talibon Women's Club.
Ubay	Ubay Women's Club.
Valencia	Valencia Women's Club.
Bulacan:	
Baliuag	Women's Club.
Bigaa	Do.
Bulacan	Do.
Calumpit	Do.
Malolos	Do.
Capiz:	
Capiz	Circulo Femenil de Capiz.
Cavite:	
Cavite	Women's Club.
Iloilo:	
Iloilo	Gota de Leche.
Laguna:	
Biñan	Women's Club.
Pagsanjan	Do.
Santa Cruz	Do.
La Union:	
San Fernando	Do.

Provinces and towns.	Names of the clubs.
Misamis:	
Cagayan	Women's Club.
Nueva Ecija:	
Cabanatuan	Club de Mujeres de Cabanatuan.
Oriental Negros:	
Silay	Circulo Femenil.
Pangasinan:	
Alaminos	Club de Mujeres.
Calasiao	Women's Club.
Mangaldan	Do.
Rizal:	
Binangonan	Club de Mujeres.
Las Piñas	Do.
Malabon	Do.
Navotas	Do.
Parañaque	Do.
Pasig	Do.
Caloocan	Do.
Tanay	Women's Club.
Taytay	Do.
Pasay	Do.
Sorsogon:	
Gubat	Do.
Surigao:	
Surigao	Do.
Tarlac:	
Capaz	Do.
Gerona	Do.
Tarlac	Do.
Concepción	Do.
Moncada	Do.
Paniqui	Do.
Victoria	Do.
Tayabas:	
Lucena	Do.
Tayabas	Do.
Boac	Do.
Mogpog	Do.
Gasang	Do.

Some of these clubs coöperated actively in the campaign for the establishment of vegetable gardens and some did not limit their activities to this campaign only, but extended their work into more extensive fields such as the opening of free clinics for children, the establishment of milk stations in charge of nurses, and the employment of nurses to make visits to the homes of mothers and babies in order to give instructions for the proper care of children and to see that due help was extended to sick babies.

The financial support of these associations is obtained through municipal appropriation, donations from patriotic and charitable persons, beneficiary shows and contributions of members. The municipality of Pasig appropriated for the aid of the Women's Club of Pasig during 1916 the amount of ₱300, the municipality of Biñang appropriated ₱500 for the construction of a model house to be used as women's club office and donated a town lot where the house could be built, the municipality of Navotas constructed a model house for the use of the Navotas Women's Club, the municipality of Malabon donated the sum of ₱2,000 to help the Women's Club of Malabon. This office has intervened in some special cases to secure funds for certain clubs and procured for others free of charge, films loaned by the Ideal and the Universal Exchange Film Company, in addition to the films owned by the Service to help them in the successful outcome of the beneficiary shows and exercises given.

To give an idea as to how the constitution of the women's clubs are framed the one adopted by the Cabanatuan Women's Club is given herewith as a sample:

NAME OF THE ASSOCIATION.

This Association shall be named the Club de Mujeres de Cabanatuan.

OBJECT OF THE ASSOCIATION.

The object of this association is to establish a medical clinic for the poor children as well as for other purposes in order to save children from sickness.

MEMBERS OF THIS ASSOCIATION.

The members of this association shall be all women who are patriotic and desire the progress of the country.

BOARD OF OFFICERS OF THE ASSOCIATION.

The officers shall be a president, a vice-president, a secretary, a vice-secretary, a treasurer and four members, all officers shall be elected and will hold office for three years.

DUTIES OF THE OFFICERS.

PRESIDENT.

(*a*) To preside at all meetings.

(*b*) To see that matters acted upon in the meeting are executed.

(*c*) To call extraordinary meetings when two or more of the members so request.

(*d*) To examine from time to time the records of the association and the books of the secretary and treasurer.

(*e*) To make an annual report of the work accomplished by the association and to submit same to the general meeting of the association.

(*f*) To approve all collection and payments made in the name of the association.

VICE-PRESIDENT.

The vice-president shall take the place of the president in case of her absence or inability.

SECRETARY.

(*a*) To keep all records of the members of the association and minutes of all meetings.

(*b*) To call meeting at the order of the president.

(*c*) In all meetings she shall be present and shall certify its minutes.

VICE-SECRETARY.

The vice-secretary shall act as secretary in the absence or inability of the latter.

TREASURER.

(*a*) To keep the funds pertaining to the association and disburse them for the legal needs of the association and with the approval of the president.

(*b*) To keep records of all collections and disbursements made in the name of the association.

(*c*) To keep an inventory of the property of the association and to account for same when called upon to do so by the association.

(*d*) To give receipts of all collections, made in the name of the association with the approval of the president.

MEMBERS OF THE BOARD.

(*a*) To be present at all meetings.

(*b*) To meet every second Sunday of the month or any other day when the needs of the association so require.

(*c*) To work for the economy, progress, and welfare of the association.

(*d*) To examine all disbursements and expenses made in the name of the association.

(*e*) To do all that is agreed upon in the meetings for the benefit of the association.

(*f*) To investigate matters which are not in accordance with rules and regulations.

MEMBERS.

(*a*) To attend all general meetings every first Sunday of the month.

(*b*) Will exercise all rights mentioned in letters *c* and *d* of the duties of the members of the board of officers.

(*c*) Will do all they can for the progress of the association.

FEES.

(*a*) All members shall make a contribution of not less than ₱1 which shall be called membership fee.

(*b*) All members shall make a monthly contribution of not less than ₱0.20.

(*c*) Shall not pay any fee unless a receipt is issued by the treasurer and countersigned by the president.

DURATION OF THE ASSOCIATION.

The association shall be continued until two-thirds of the members in a general meeting decide to discontinue the work of the association.

THE TIME THIS CONSTITUTION SHALL TAKE EFFECT.

This constitution shall take effect when approved.

Approved October, 1916.

The women's clubs are very promising organizations. Aside from the work already stated, they indirectly inculcate into the people the spirit of the saving of human lives and the same must in the natural course of events suggest and initiate a desire for better sanitation and living.

CAMPAIGN FOR SANITARY ABODES.

In connection with the Women's Clubs, a campaign for sanitary abodes is inculcated into the people by explaining to them the advantages of a house which will provide the main requirements of comfort and sanitation, such as efficient privy, safe deposit for waste water, ventilation, light and beauty. As a result, the women's clubs of Biñang and Malabon have agreed to construct their houses in accordance with the suggestion of this Office and are very anxious as to the time when this Service will be able to furnish the plan and supervise the construction when the work is begun. It is intended to build these model houses with the cement shingles and slabs invented by Mr. Simonson of the Mariveles Quarantine Station.

One of the type of this sanitary model was constructed at Mariveles and it has received the most favorable comment from the inhabitants of that town. It has five rooms, namely: Reception and dining room combined, sala or receiving room and sleeping room combined, dormitory or bedroom proper, kitchen, and porch, bath and closet combined. The windows are of double panels which admit the air in two places and if privacy is desired one panel may be lowered leaving still one opening for ventilation.

This kind of house is fireproof, nice and cool, beautiful and attractive, and does not require expensive repairs, and in the estimate of engineers it will last at least 25 years.

The advantages of this sanitary model house over the ordinary nipa houses may be considered from their sanitary and economical points of view:

Sanitarily the model house is more ventilated, easily cleaned, no place for bugs, and rooms are so arranged that separation of sexes and isolation of sick can be had. It is provided with all the main sanitary facilities necessary for a house. The Antipolo system of toilet can be easily installed, it is therefore very appropriate for towns and districts where houses of light materials abound. The waste water from the kitchen and bath may be disposed of through pipes to the closet pit thus leaving the ground free from breeding places for mosquitos and flies.

Economically the model house is better and cheaper than a nipa house of its size because it is incombustible, it is more than twice as durable, it does not require extensive repairs, it is quickly repaired and it depreciates very little. The nipa house is very inflammable, requires yearly repairs, is less durable and depreciates quickly. The model house costs approximately ₱500 and a good nipa house of the same size costs approximately ₱350 and will require about ₱150 for repairs during its existence which will not exceed ten years. It is therefore reasonably assumed that the model house will outlast two nipa houses by five years with a cost of ₱500 as against ₱1,000 for the nipa. A picture of the type of the model house is shown herewith.

When a house of this kind is built in any town of the Archipelago it may be expected that it will be taken as a model and future construction will be along the same sanitary lines and **with the same kind of materials. This will mean an improvement of the town, permanent in character both hygienically and economically.**

SANITARY CAMPAIGN PROPER.

In the towns where the sanitary commissions have conducted their work of investigation a lack of the most fundamental measures of sanitation has been observed. This being the case, effort was made to have municipalities enact ordinances which would at least provide for the minimum sanitation a town should have. Said ordinances refer to the matter of disposing of human wastes, pure water supply, garbage collection, and pure milk. The fruits of the work on this line are:

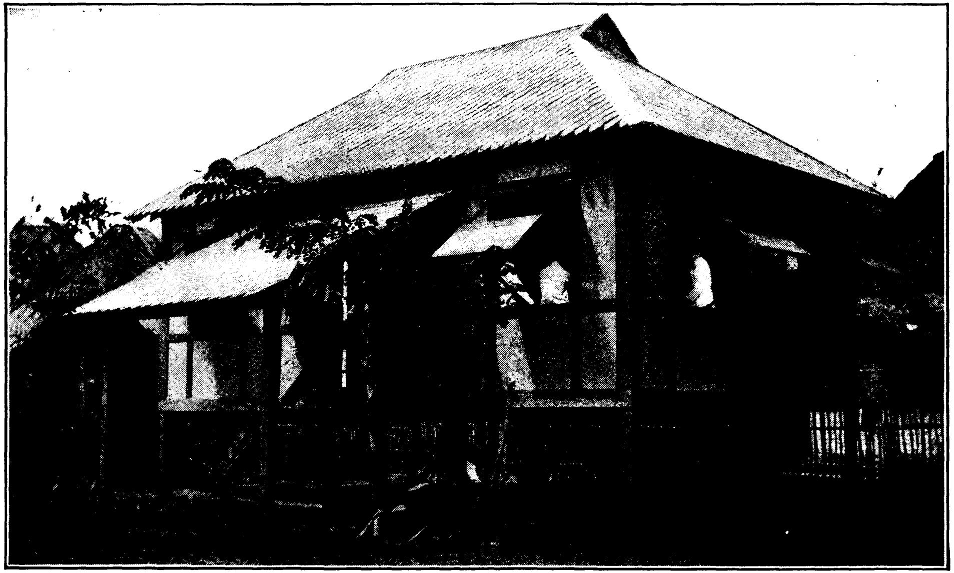
1. The enactment of ordinances requiring every householder to establish in every home as the minimum means for disposing of human wastes, a privy of the Antipolo toilet system, in the municipalities of Pasig, Province of Rizal and Boac, Subprovince of Marinduque, Province of Tayabas.

2. The approval of an appropriation of ₱1,000 for the construction of public toilets near the public markets at Malabon, Rizal.

3. Appropriation for constructing public toilet at Navotas, Rizal.

4. A temporary arrangement was made for a house to house potable water service in the municipality of Pasig by means of a tank wagon drawn by two mules, the water being taken from an artesian well.

5. The loan of ₱50,000 to the municipality of Pasig by the Insular Government for the enlargement of its market and providing it with proper sanitary facilities.



SANITARY MODEL HOUSE.

6. Data was obtained as to the cost of running gasoline tank wagons for supplying potable drinking water to the people and submitted to the municipality of Pasig.

It is believed that more will be accomplished in this respect in the near future.

There is no doubt that upon the enforcement of the sanitary ordinances and the actual accomplishment of the plans for sanitary improvements above mentioned that many diseases will be avoided and mortality will be reduced.

DEVELOPMENT OF INDUSTRIES BEARING CONNECTION WITH HYGIENE AND SANITATION.

Certain persons of Buting, Pasig, Rizal, engaged in the business of pottery, were requested by this Office to manufacture clay pipes, and receivers, for the Antipolo system of toilets, as models, which were left at the municipalities of Pasig and Taytay for exhibition. The said models appear to be satisfactory for the Antipolo system of toilets. In order to induce the people of Buting to manufacture these models for trade and to improve them, three men from that barrio engaged in pottery making, with the municipal president, municipal secretary, and a municipal councilor of Pasig, were invited and taken to San Rafael to inspect two kilns located at that place. Dr. Witt of the Bureau of Science kindly went along on this trip and gave advice. After the inspection was made the Buting men promised to build a kiln of the San Rafael type and stated that after harvest time the work would be commenced. Later they were seen and one of them agreed to build the kiln in his lot and requested that a mould be furnished as a model. In view of the fact that the models made at Buting were heavy, thick, and too brittle, Dr. Witt's opinion was obtained and upon his suggestion an effort was made to have other models manufactured at San Pedro Macati at the kiln of Mr. Jimenez where tapayan jars are vitrified. As a consequence a better pipe was obtained which if well taken care of should last almost indefinitely.

There is a big possibility of developing this industry as these pipes may be used also as sewer pipes, and as street gutters and canals. It is believed that a big demand for these articles will induce capitalists to start a factory for making this kind of clay articles. When that time comes the problem of disposing of human wastes efficiently, and providing proper drainage in every town of the Islands may be considered far advanced toward a practical solution.

Endeavor is also being made to improve the filipino stove, generally named *kalan,* to see whether the heat wasted by existing defects can be utilized, as well as to remove the nuisance which results from spreading smoke in the house. This idea has been suggested to some pottery makers and it is hoped that success in this line will be obtained. Economy in fuel will result and much purer air will be available in the house during cooking time.

One of the constant aims and desires of the filipino people has been and is to find a cheap and incombustible article which would in an economical way advantageously substitute nipa for roofing, to put a stop to the devastating losses from fires in the nipa districts. This office has suggested to the clay pottery makers to make experiments on clay tiles for this purpose. The hope is entertained that with continuous effort the time will come when a satisfactory clay substitute for nipa may be had.

It is desired to emphasize the fact, however, that one substitute for nipa has been found in the cement shingles and slabs invented by Mr. Simonson of the Quarantine Service and used in the model sanitary house. It is true that the original cost of these shingles and slabs is more than the nipa but in the long run they are cheaper. These cement shingles and slabs will last almost indefinitely while nipa will hardly last ten years. The difference of the original cost is approximately 50 per cent in favor of nipa but the cement shingles and slabs will outlast many times the duration of nipa and in 20 years there will be expended for repairs to the nipa the entire original cost of the shingles and slabs.

These cement shingles and slabs are made in moulds with cement, sand and ipa (rice chaff) reënforced with small pieces of bamboo woven together. A first-class mixture is one of cement, one of sand, and one of ipa, and a second class mixture is 3 of cement, 5 of sand and 2 of ipa. The kind of slabs and shingles produced with these mixtures are the same but the second mixture while requiring more expert labor will yield a greater number.

The shingles and slabs must be cured in water after they have been taken from the moulds.

A factory for the production of these shingles and slabs would very much facilitate the spread of the construction of the model houses.

REPORT OF THE OFFICE OF DISTRICT NURSING.

[Pearletta Clark, Chief District Nurse.]

The crowded insanitary living conditions of the tenement district of Manila, the high infant mortality both in the city and provinces, the great amount of tuberculosis, beri-beri, eye trouble and other diseases, plainly proved the need of some effort to remedy these conditions. The question of district nurses was brought up in the early part of 1915 and in September, 1915, the work was started with one American nurse, one Filipina nurse and one dietist.

With the plan to extend the work to the provinces, it was decided to give a two months course in instruction and practice in the city of Manila. Letters were sent to the different hospitals having training schools, asking for their coöperation. Soon several nurses had applied to take the course, and during the year eighteen graduate nurses have taken this course in public health nursing and all have been appointed to positions in Manila and the provinces.

At present there are in Manila one American supervisor, one American dietist, and four Filipina visiting nurses; thirty-six nurses are working under the provincial district health officers, and one nurse and one dietist are with each sanitary commission.

The nurses in Manila have made house to house calls entering 6,175 homes and making 2,868 subsequent visits where they have been able to take care of many cases of skin disease, wounds, intestinal parasites, and other troubles; the severer cases they refer to the hospitals or city clinics. The nurses have instructed the mothers in the care and feeding of their babies and in the cleanliness of the home, as well as in the proper balancing of the diet. The nurses on the sanitary commission have gone into 5,335 homes, and have held clinics where milk formulas and demonstrations in balanced diets were given.

This work is growing, the nurses are gaining the confidence of the people and overcoming some of their superstitions. Where at first the people feared to have a child treated they now request the nurses to come and see their sick. We have requests for nurses who have taken this course from some of the newly organized women's clubs; the Bureau of Education and the provincial stations are also asking for nurses. We feel that we have made some effort toward helping the people to help themselves, but the work done is very little toward the great crying need of the Philippines.

Tabular report of the work of the district nurses for the year ending December 31, 1916.

Manila nurses:	
First visit	6,175
Subsequent visits	2,868
Visits made in homes by sanitary commission nurses:	
Parañaque and Las Piñas	899
Pasig	607
Navotas	666
Malabon	627
Boac	1,001
Antipolo	313
Hagonoy	1,222
Total	5,335

REPORT OF CLERICAL OFFICE.

[M. J. WALSH, Acting Chief Clerk.]

The clerical office force was pushed to the limit during the past year to keep up with the constantly increasing activities of the Service, and especially so during the latter part of the year when it was called upon to perform the extra work occasioned by the establishment of a new division, with one of its force as chief; to perform the clerical work in connection with the compiling of sanitary commission data; to stand the loss of two of its oldest employees, and the detail of the two American clerks in the record section, one to the desk of the chief of the clerical office for the past six months and the other on various occasions to take charge of transportation during the worst of the cholera epidemic, without any corresponding increase in its force.

In spite of these handicaps the force pulled through splendidly, having everything up to date on the last day of the year.

REPORT OF PROPERTY OFFICE.

[B. D. **Burnham, Chief of Office.**]

During the year four hundred fifty-nine general requisitions were received and filled, originating from the following stations:

Provincial requisitions	117
Health Stations	113
Central Office	15
Office of Sanitary Engineering	23
Office of Statistics	2
Board of Dental Examiners	1
Board of Pharmaceutical Examiners	1
Disinfecting Squad, P. H. S.	15
Philippine General Hospital	3
Mary Chiles Hospital	1
San Lazaro Hospital	7
Southern Islands Hospital	19
Baguio Hospital	16
Bayombong Hospital	2
Butuan Hospital	9
Bontoc Hospital	8
Cuyo Hospital	10
Culion Leper Colony	16
Iwahig Penal Colony	1
Sibul Springs Sanatorium	8
Sanitary Commissions	29
Department of District Nursing	39
Bureau of Supply	2
City of Manila	1
Division of Cold Storage	1
Total	459

Two hundred forty-five requisitions were prepared and forwarded the Bureau of Supply for delivery to the following stations:

For delivery to Office of Property	126
For delivery to San Lazaro Hospital	26
For delivery to Health Stations	3
For shipment to Butuan Hospital	6
For shipment to Southern Islands Hospital	18
For shipment to Culion Leper Colony	20
For shipment to Bontoc Hospital	6
For shipment to Cuyo Hospital	13
For shipment to Baguio Hospital	15
For shipment to Caloocan, Rizal	7
For shipment to Iloilo, Iloilo	2
For shipment to Mariveles, Bataan	3
Total	245

One hundred forty-two requisitions were prepared and forwarded the Bureau of Printing.

Orders for general supplies prepared under the direct order and payment system, 215.

Commissary requisitions prepared and forwarded the Bureau of Supply:

For San Lazaro Hospital	14
For Culion Leper Colony	31
For Baguio Hospital	4
For Southern Islands Hospital	5
For Bontoc Hospital	2
For Cuyo Hospital	1
Total	57

Orders for commissaries prepared under direct order and payment system, 456.

Vaccine report.

	Units.
On hand January 1, 1916	21,950
Received during the year	1,373,700
Total to be accounted for	1,395,650
Issued during the year	1,392,300
Remaining on hand December 31, 1916	3,350

Shipments made by boat were 271 and by rail 113, making a total of 384.

Interbureau vouchers and bills received and passed by the Office of Property:

	Quantity.	Amount.
Bureau of Supply	616	₱179,264.97
Bureau of Prisons	36	2,153.30
Bureau of Agriculture	6	337.25
Bureau of Posts	12	2,286.00
Bureau of Public Works	9	115.88
Bureau of Customs	1	73.78
Bureau of Science	13	15,484.62
Bureau of Printing	17	8,410.74
Bureau of Audits	1	17.70
Bureau of Civil Service	1	196.56
Philippine School of Arts and Trades	13	104.94
Division of Cold Storage	11	3,642.66
Bureau of Coast and Geodetic Survey	1	1.50
Philippine Board, Panama Pacific Exposition	1	3,952.83
Open Market	480	68,831.94
Total	1,218	284,874.67

SYNOPSIS OF RESULTS.

The following synopsis of results, worthy of note, have been obtained during the year:

1. Cholera was, with difficulty, fairly well controlled and by the end of the year had largely disappeared.
2. Plague did not exist.
3. Smallpox was controlled, and further eradicated.
4. Diphtheria was controlled, and perceptibly diminished.
5. A worth-while system of school inspection was inaugurated.
6. Rabies was controlled and perceptibly diminished.
7. Over 6,000 "Antipolo Systems" were installed.
8. One hundred eighteen new dispensaries reaching over 100,000 poor people were established.
9. Six additional provinces, making sixteen in all, were organized into sanitary divisions.
10. A satisfactory type of durable sanitary house was developed.
11. Fifty-seven women's clubs have been formed and dedicated to the reduction of infant mortality and improvement of general welfare.
12. Almost 15,000 families have agreed to establish home gardens.
13. The sanitary commissions have made detailed studies of and recommendations to seven towns and have almost completed two additional ones.
14. The establishment of emergency cholera hospitals as a factor in the control of the disease has been brought about.
15. The confidence and coöperation of the people in the control of epidemic diseases has been gained as never before.
16. Extensive improvements tending to better conditions at the Culion Leper Colony have been completed.
17. Decided progress in the filling of lowlands and tidal areas by the owners thereof has been made in Manila.
18. Mosquitoes, flies and rats have been held down to a minimum, in the City of Manila.
19. The coöperation of the medical profession in the reporting of disease has been secured.
20. Decided progress in our knowledge of cholera, and causes of insanity has been made.
21. Marked progress in the sanitation and civilization of the peoples of the non-christian provinces has been manifest, notably in Mindanao and Sulu, and in the province of Agusan.
22. A hospital bulletin has been prepared which will facilitate markedly the construction of additional hospitals in the provinces.
23. Cemeteries have been much more closely supervised and their sanitary standards raised.
24. The first strictly lying-in hospital to be opened in the Philippines, was started in the town of Malolos, Province of Bulacan.
25. Two new provincial hospitals were opened and preliminaries started for several others.
26. Four new provincial laboratories have been installed.
27. The possibilities of two new potential industries have been pointed out, namely, tiles and slabs for the sanitary houses, and earthenware pipes for the "Antipolo System" and for use as sewer pipe, etc.

J. D. Long,
Director of Health.

REPORT OF STATISTICAL OFFICE

[Dr. MANUEL GOMEZ, Chief of Office.]

JANUARY 1 TO DECEMBER 31, 1916

GENERAL STATISTICS.

[Unless otherwise stated these statistics are for the fiscal year from January 1 to December 31, 1916.]

POPULATION OF THE CITY OF MANILA.

(Transients not included.)

[Health Census of 1914.]

BY NATIONALITIES.

Nationality.	Population.		
	Male.	Female.	Total.
Americans	3,584	1,890	5,474
Filipinos	125,730	111,210	236,940
Spaniards	2,414	1,992	4,406
Other Europeans	1,027	479	1,506
Chinese	15,235	1,422	16,657
All Others	1,407	553	1,960
Total	149,397	117,546	266,943

BY DISTRICTS.

Health districts.	Population.		
	Male.	Female.	Total.
No. 1, Intramuros	18,467	13,586	32,053
No. 2, Meisic	57,121	32,943	90,064
No. 4, Sampaloc	22,856	21,367	44,223
No. 5, Tondo	36,520	35,279	71,799
No. 6, Paco	14,433	14,371	28,804
Total	149,397	117,546	266,943

MARRIAGES.[1]

Nationality.	Total marriages.	Health districts—					Single males married.			Widowed males married.		
		No. 1.	No. 2.	No. 4.	No. 5.	No. 6.	Single female.	Widowed female.	Divorced female.	Single female.	Widowed female.	Divorced female.
Americans	63	34	11	4	7	7	49	7	2	1	2	-----
Filipinos	2,239	228	933	243	762	73	1,916	120	-----	111	92	-----
Spaniards	2	-----	1	-----	1	-----	1	-----	-----	1	-----	-----
Other Europeans	16	11	3	-----	-----	2	12	2	-----	1	1	-----
Chinese	40	2	20	1	17	-----	31	3	-----	5	1	-----
All Others	6	-----	2	1	2	1	5	1	-----	-----	-----	-----
Total	2,366	275	970	249	789	83	2,014	133	2	119	96	0

Nationality.	Divorced males married.			Nationality of brides.						Relationship.	
	Single female.	Widowed female.	Divorced female.	Americans.	Filipinos.	Spaniards.	Europeans.	Chinese.	All Others.	Blood.	Affinity.
Americans	2	-----	-----	22	36	-----	4	-----	1	-----	-----
Filipinos	-----	-----	-----	-----	2,237	-----	1	-----	1	6	-----
Spaniards	-----	-----	-----	-----	1	1	-----	-----	-----	-----	-----
Other Europeans	-----	-----	-----	3	6	1	6	-----	-----	-----	-----
Chinese	-----	-----	-----	-----	34	-----	-----	6	-----	-----	-----
All Others	-----	-----	-----	-----	6	-----	-----	-----	-----	-----	-----
Total	2	0	0	25	2,320	2	11	6	2	6	0

Average per 1,000 population, 17.72.

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[1] Registration incomplete.

MARRIAGES BY AGE.[1]

Males.		Females.						
Ages.	Number.	To 14 years.	To 20 years.	To 25 years.	To 30 years.	To 40 years.	To 50 years.	Over 50 years.
To 14 years								
To 20 years	674	5	592	54	22	1		
To 25 years	1,003	6	663	256	66	11	1	
To 30 years	351	1	146	122	65	17		
To 40 years	243	2	79	60	53	46	2	1
To 50 years	66		10	11	14	22	8	1
Over 50 years	29				4	6	13	6
Total	2,366	14	1,490	503	224	103	24	8

[1] Registration incomplete.

BIRTHS REPORTED.[1]

Nationality.	Male.	Annual birth rate per 1,000.	Female.	Annual birth rate per 1,000.	Total.	Annual birth rate per 1,000.
Americans	112	31.25	93	49.20	205	37.44
Filipinos	4,400	34.99	4,106	36.92	8,506	35.89
Spaniards	34	14.08	34	17.06	68	15.43
Other Europeans	23	22.39	22	45.92	45	29.88
Chinese	139	9.12	101	71.02	240	14.40
All Others	11	7.81	7	12.65	18	9.18
Total and average	4,719	31.58	4,363	37.11	9,082	34.02

[1] Registration incomplete.

BIRTHS BY DISTRICTS.[1]

Health districts.	Legitimates.			Illegitimates.			Grand total.	Annual birth rate per 1,000.
	Male.	Female.	Total.	Male.	Female.	Total.		
No. 1, Intramuros	733	752	1,485	68	60	128	1,613	50.32
No. 2, Meisic	875	812	1,687	46	55	101	1,788	19.85
No. 4, Sampaloc	821	750	1,571	46	40	86	1,657	37.46
No. 5, Tondo	1,391	1,272	2,663	77	71	148	2,811	39.15
No. 6, Paco	631	524	1,155	31	27	58	1,213	42.11
Total	4,451	4,110	8,561	268	253	521	9,082	34.02

	Living.	Stillbirth.
Births attended by—		
Physician	2,000	142
Midwife	2,561	70
Family	4,521	221

[1] Registration incomplete.

BIRTHS, ACCORDING TO NUMBER OF CHILDREN BORNE BY MOTHER.

Number of births in the order in which the child was born, whether first child, second child, etc.	Living.		Total.	Stillborn.		Total.	Grand total.
	Male.	Female.		Male.	Female.		
First	982	936	1,918	57	36	93	2,011
Second	859	756	1,615	26	31	57	1,672
Third	641	624	1,265	30	17	47	1,312
Fourth	562	504	1,066	27	19	46	1,112
Fifth	466	406	872	24	17	41	913
Sixth	335	323	658	19	12	31	689
Seventh	279	248	527	20	18	38	565
Eighth	196	194	390	8	6	14	404
Ninth	138	133	271	9	11	20	291
Tenth	102	81	183	9	2	11	194
Eleventh	65	57	122	6	8	14	136
Twelfth	46	37	83	3	5	8	91
Thirteenth	25	30	55	6	2	8	63
Fourteenth	10	16	26	2		2	28
Fifteenth	3	10	13	1	1	2	15
Sixteenth	4	3	7	1		1	8
Seventeenth	2	3	5				5
Eighteenth	2	1	3				3
Nineteenth		1	1				1
Twentieth	2		2				2
Total	4,719	4,363	9,082	248	185	433	9,515

NUMBER OF DEATHS AND DEATH RATE PER 1,000 AMONG RESIDENTS BY NATIONALITIES.

Nationality.	Male.	Annual death rate per 1,000.	Female.	Annual death rate per 1,000.	Total.	Annual death rate per 1,000.
Americans	24	6.69	9	4.76	33	6.02
Filipinos	3,518	27.98	3,331	29.95	6,849	28.90
Spaniards	25	10.35	7	3.51	32	7.26
Other Europeans	7	6.81	5	10.43	12	7.96
Chinese	216	14.17	15	10.54	231	13.86
All others	6	4.26	2	3.61	8	4.08
Total and average	3,796	25.40	3,369	28.66	7,165	26.84

A CLASSIFIED REPORT OF ALL DEATHS OCCURRING IN MANILA, INCLUDING TRANSIENTS.

Social condition.	Number.	
	Males.	Females.
Married	1,133	814
Divorced		
Widowed	264	551
Single	536	174
Children	2,659	2,312
Condition not stated	35	11
Total	4,627	3,862
Grand total	8,489	

Stillbirths	469
With medical attendance	5,753
Without medical attendance	2,786

DEATHS BY AGES.

Ages.	Residents.		Transients.		Total.
	Male.	Female.	Male.	Female.	
Under 30 days	442	315	36	30	823
30 days to under 1 year	933	797	279	227	2,236
1 year to under 2 years	377	371	35	28	811
2 years to 4 years	350	343	26	32	751
5 years to 9 years	113	114	14	7	248
10 years to 14 years	46	43	8	5	102
15 years to 19 years	100	61	44	15	220
20 years to 29 years	301	282	108	51	742
30 years to 39 years	250	272	109	41	672
40 years to 49 years	283	187	77	20	567
50 years to 59 years	203	131	42	15	391
60 years to 69 years	174	128	29	11	342
70 years to 79 years	90	112	9	6	217
80 years to 89 years	72	106	6	2	186
90 years to 99 years	42	70	2	2	116
100 years and over	11	34	2		47
Age not stated	9	3	1		13
Total	3,796	3,369	827	492	[a] 8,484

[a] One Chinese male, three Filipino males and one female, permanent residence unknown, not included.

DEATHS AND DEATH RATE PER 1,000, BY DISTRICTS, INCLUDING TRANSIENTS.

Health Districts.	Deaths.	Annual death rate per 1,000.
No. 1, Intramuros	1,204	36.52
No. 2, Meisic	1,708	18.43
No. 4, Sampaloc	1,384	30.83
No. 5, Tondo	3,415	46.89
No. 6, Paco	778	26.71
Total	8,489	31.15

DEATHS, WITH CAUSES, OCCURRING AMONG RESIDENTS IN THE CITY OF MANILA (STILLBIRTHS NOT INCLUDED).

Causes of death.	Americans.		Filipinos.		Spaniards.		Other Europeans.		Chinese.		All others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
I. General diseases.													
1. Typhoid fever			46	49	1				1		1		98
3. Relapsing fever			1										1
4. Malaria			20	18					5				43
4a. Malarial cachexia			1	2									3
5. Smallpox			1										1
6. Measles			1	3									4
8. Whooping cough			1	2									3
9. Diptheria and croup			12	14		1		1					28
10. Influenza			4	5									9
12. Asiatic cholera		1	262	215					27	1			506
14. Dysentery		1	72	67			1		2				143
17. Leprosy			1	1									2
18. Erysipelas			5	5									10
19. Other epidemic diseases			2										2
20. Purulent infection and septichæmia			16	7					1				24
24. Tetanus			70	36					7				113
27. Beriberi			367	305					12				684
28. Tuberculosis of the lungs	1		583	542	1				45	1	1		1,174
29. Acute milliary tuberculosis			12	6									18
30. Tuberculous meningitis			38	63					1				102
31. Abdominal tuberculosis			11	21					1				33
32. Pott's disease			2	2									4

Deaths, with causes, occurring among residents in the city of Manila (still-births not included)—Continued.

Causes of death.	Americans.		Filipinos.		Spaniards.		Other Europeans.		Chinese.		All others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
I. General diseases—Continued.													
33. White swellings				1			1						2
34. Tuberculosis of other organs			4	2									6
35. Disseminated tuberculosis			10	7	1								18
36. Rickets			1	2									3
37. Syphilis			7	1					2				10
39. Cancer and other malignant tumors of the buccal cavity			1	2					1				4
40. Cancer and other malignant tumors of the stomach, liver			11	5	1		1						18
41. Cancer and other malignant tumors of the peritonæeum, intestines, rectum				1									1
42. Cancer and other malignant tumors of the female genital organs				13									13
43. Cancer and other malignant tumors of the breast				3									3
44. Cancer and other malignant tumors of the skin			2	1									3
45. Cancer and other malignant tumors of other organs and of organs not specified			6	4	2								12
47. Acute articular rheumatism									2				2
48. Chronic rheumatism and gout			9	4					1				14
49. Scurvy			1	2									3
50. Diabetes		1	3	3	2				3				12
51. Exophthalmic goitre				2									2
52. Addison's disease				1									1
53. Leuchæmia			2										2
54. Anæmia, chlorosis			1	3		1							5
55. Other general diseases			1	4									5
56. Alcoholism (acute or chronic)	3		1										4
II. Diseases of the nervous system and of the organs of special sense.													
60. Encephalitis			1	3									4
61. Simple meningitis			127	154		1							282
63. Other diseases of the spinal cord			1		1								2
64. Cerebral hæmorrhage, apoplexy	1		47	35					8				91
65. Softening of the brain			1	3					7				11
66. Paralysis without specified cause			13	12	1								26
68. Other forms of mental alienation								2					2
69. Epilepsy			1	1									2
70. Convulsions (nonpuerperal) 5 years and over)										1			1
71. Convulsions of infants (under 5 years of age)	1		139	121					5				266
73. Hysteria							1						1
74. Other diseases of the nervous system			1										1
75. Other diseases of the eyes and their annexa				1									1
76. Diseases of the ears			1										1
III. Diseases of the circulatory system.													
77. Pericarditis				1									1
78. Acute endocarditis			6	4		1	1						12
79. Organic diseases of the heart	1		37	40	3	1			34	2			118
80. Angina pectoris	1		19	8	3								31
81. Diseases of the arteries, atheroma, aneurysm, etc	1		10	5					13				29
82. Embolism and thrombosis			1	3		1							5
84. Diseases of the lymphatic system (lymphangitis, etc.)			2										2
85. Hæmorrhage; other diseases of the circulatory system			1										1

Deaths, with causes, occurring among residents in the city of Manila (still-births not included)—Continued.

Causes of death.	Americans.		Filipinos.		Spaniards.		Other Europeans.		Chinese.		All others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
IV. Diseases of the respiratory system.													
87. Diseases of the larynx				1									1
88. Diseases of the thyreoid body			1										1
89. Acute bronchitis	1		279	234					1	1			516
90. Chronic bronchitis	1		84	100	1				4				190
91. Broncho-pneumonia		2	139	128									269
92. Pneumonia	1		21	29			1				1		53
93. Pleurisy			7	9									16
94. Pulmonary congestion, pulmonary apoplexy			4	3									7
96. Asthma			6	8	1				1				16
97. Pulmonary emphysema			3										3
98. Other diseases of the respiratory system (tuberculosis excepted)				1									1
V. Diseases of the digestive system.													
99. Diseases of the mouth and annexa				1	1								2
100. Diseases of the pharynx				1									1
101. Diseases of the œsophagus			1										1
102. Ulcer of the stomach	1		9	3	2								15
103. Other diseases of the stomach (cancer excepted)			7	7									14
104. Diarrhœa and enteritis (under 2 years)	2	1	197	184				1	3	3	1		392
105. Diarrhœa and enteritis (2 years and over)		1	63	48					2				114
107. Intestinal parasites			10	6									16
108. Appendicitis and typhlitis			4	3			1		1				9
109. Hernias, intestinal obstructions			10	6	1				1				18
110. Other diseases of the intestines			11	6									17
111. Acute yellow atrophy of the liver			3	4									7
113. Cirrhosis of the liver			2	5					2				9
114. Biliary calculi			2	1									3
115. Other diseases of the liver	1		8	4									13
117. Simple peritonitis (nonpuerperal)			6	9									15
118. Other diseases of the digestive system (cancer and tuberculosis excepted)				1									1
VI. Nonvenereal diseases of the genito-urinary system and annexa.													
119. Acute nephritis			34	31					1				66
120. Bright's disease	1		71	88	3				7	1		1	172
122. Other diseases of the kidneys and annexa				6									6
123. Calculi of the urinary passages				1									1
124. Diseases of the bladder				1									1
126. Diseases of the prostate			1										1
128. Uterine hæmorrhage (nonpuerperal)				3									3
130. Other diseases of the uterus				5									5
131. Cysts and other tumors of the ovary				1									1
VII. The puerperal state.													
134. Accidents of pregnancy				3									3
135. Puerperal hæmorrhage				15									15
136. Other accidents of labor				7									7
137. Puerperal septichæmia				18									18
138. Puerperal albuminuria and convulsions				4									4
VIII. Diseases of the skin and of the cellular tissue.													
142. Gangrene			8	7									15
143. Furuncle			1										1
144. Acute abscess			5										5

Deaths, with causes, occurring among residents in the city of Manila (stillbirths not included)—Continued.

Causes of death.	Americans.		Filipinos.		Spaniards.		Other Europeans.		Chinese.		All others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
IX. Diseases of the bones and of the organs of locomotion.													
146. Diseases of the bones (tuberculosis excepted)	----	----	2	2	----	----	----	----	----	----	----	----	4
X. Malformations.													
(2) Congenital malformations of the heart	----	----	4	4	----	----	----	----	----	----	----	----	8
(3) Other congenital malformations	----	----	3	----	----	----	----	----	----	----	----	----	3
XI. Diseases of early infancy.													
151. Congenital debility, icterus, and sclerema	1	1	47	37	----	----	----	----	----	1	1	----	88
(1) Premature birth (not stillborn)	----	----	17	13	----	----	----	1	----	1	----	----	32
(2) Congenital debility	2	----	250	201	----	----	----	----	5	2	----	1	461
152. Other diseases peculiar to early infancy	1	----	----	----	----	----	----	----	----	----	----	----	1
(1) Injuries at birth (not stillborn)	----	1	2	----	----	----	----	----	----	----	----	----	3
(2) Other causes peculiar to early infancy	----	----	11	9	----	----	----	----	----	----	----	----	20
XII. Old age.													
154. Senility	----	----	119	221	----	1	----	----	1	----	----	----	342
XIII. Affections caused by external causes.													
155. Suicide by poison	----	----	2	1	----	----	----	----	----	----	----	----	3
157. Suicide by hanging or strangulation	----	----	----	----	----	----	----	----	1	----	----	----	1
160. Suicide by cutting or piercing instruments	----	----	2	----	----	----	----	----	----	----	----	----	2
165b. Other acute poisonings	----	----	1	----	----	----	----	----	1	1	----	----	3
167. Burns (conflagration excepted)	----	----	6	8	----	----	----	----	----	----	----	----	14
169. Accidental drowning	----	----	12	3	----	----	----	----	2	----	----	----	17
172. Traumatism by fall	1	----	4	2	----	----	----	----	----	----	1	----	8
174. Traumatism by machines	----	----	1	----	----	----	----	----	----	----	----	----	1
175. Traumatism by other chrushing (vehicles, railways, landsides, etc.)	----	----	7	----	----	----	----	----	----	----	----	----	7
180. Lightning	----	----	1	----	----	----	----	----	----	----	----	----	1
182. Homicide by firearms	1	----	1	----	----	----	----	----	----	----	----	----	2
183. Homicide by cutting or piercing instruments	1	----	3	7	----	----	----	----	1	----	----	----	12
184. Homicide by other means	----	----	1	----	----	----	----	----	1	----	----	----	2
185. Fractures (cause not specified)	----	----	2	----	----	----	----	----	----	----	----	----	2
186. Other external violence	----	----	9	1	----	----	----	----	----	----	----	----	10
XIV. Ill-defined diseases.													
187. Ill-defined organic disease	----	----	----	1	----	----	----	----	----	----	----	----	1
189. Cause of death not specified or ill-defined	----	----	18	14	----	----	----	----	3	----	----	----	35
Total	24	9	3,518	3,331	25	7	7	5	216	15	6	2	7,165
Grand total	33		6,849		32		12		231		8		7,165

DEATHS, WITH CAUSES, OCCURRING AMONG TRANSIENTS IN THE CITY OF MANILA (STILLBIRTHS NOT INCLUDED).

Causes of death.	Americans.		Filipinos.		Spaniards.		Other Europeans.		Chinese.		All others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
I. General diseases.													
1. Typhoid fever			19	10					1		2		32
4. Malaria			7	2					3		1		13
4a. Malarial cachexia			2										2
6. Measles			2										2
8. Whooping cough			2										2
9. Diphtheria and croup	1		3	5									9
10. Influenza			1										1
12. Asiatic cholera	1	1	22	25									49
14. Dysentery			5	14					1		1		21
17. Leprosy			3	1									4
18. Erysipelas			1										1
20. Purulent infection and septichæmia	1		5	6									12
23. Rabies				1									1
24. Tetanus			7	5					1				13
27. Beriberi			117	95					1				213
28. Tuberculosis of the lungs			97	41	3				7		1		149
29. Acute miliary tuberculosis			4	1									5
30. Tuberculous meningitis			4	2									6
31. Abdominal tuberculosis			4	6									10
35. Disseminated tuberculosis			14	4									18
37. Syphilis									1				1
39. Cancer and other malignant tumors of the buccal cavity				2									2
40. Cancer and other malignant tumors of the stomach, liver			6	1					1		1		9
41. Cancer and other malignant tumors of the peritonæum, intestines, rectum			1										1
42. Cancer and other malignant tumors of the female genital organs				1									1
43. Cancer and other malignant tumors of the breast				1									1
45. Cancer and other malignant tumors of other organs and of organs not specified	1		4	2	1								8
47. Acute articular rheumatism	1												1
50. Diabetes			2	1									3
51. Exophthalmic goitre									1				1
53. Leuchæmia				1									1
54. Anæmia, chlorosis			1	1									2
II. Diseases of the nervous system and of the organs of special sense.													
60. Encephalitis	1												1
61. Simple meningitis			26	19									45
64. Cerebral hæmorrhage, apoplexy			12								1		13
65. Softening of the brain									1				1
68. Other forms of mental alienation			20	1									21
69. Epilepsy				1									1
71. Convulsions of infants (under 5 years of age)			30	25					1				56
III. Diseases of the circulatory system.													
78. Acute endocarditis			4						1				5
79. Organic diseases of the heart	3		19	13			1		3		1		40
81. Diseases of the arteries, atheroma, aneurysm, etc			2	1					1				4
82. Embolism and thrombosis				1									1
84. Diseases of the lymphatic system (lymphangitis, etc.)				1									1
85. Hæmorrhage; other diseases of the circulatory system			1	1									2

Deaths, with causes, occurring among transients in the city of Manila (still-births not included)—Continued.

Causes of death.	Americans.		Filipinos.		Spaniards.		Other Europeans.		Chinese.		All others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
IV. Diseases of the respiratory system.													
89. Acute bronchitis			58	41					1				100
90. Chronic bronchitis			5	13					3				21
91. Broncho-pneumonia	1		10	6									17
92. Pneumonia	1		19	3									23
93. Pleurisy			4	1									5
94. Pulmonary congestion, pulmonary apoplexy				1									1
98. Other diseases of the respiratory system (tuberculosis excepted)			1										1
V. Diseases of the digestive system.													
99. Diseases of the mouth and annexa	1												1
102. Ulcer of the stomach			3						2				5
103. Other diseases of the stomach (cancer excepted)			1										1
104. Diarrhœa and enteritis (under 2 years)	1		36	22									59
105. Diarrhœa and enteritis (2 years and over)			5	8							1		14
107. Intestinal parasites			1										1
108. Appendicitis and typhlitis			4										4
109. Hernias, intestinal obstructions			8										8
110. Other diseases of the intestines	1		5	5									11
111. Acute yellow atrophy of the liver				1									1
113. Cirrhosis of the liver			6	2					1				9
114. Biliary calculi				1									1
115. Other diseases of the liver		1	7		1								9
117. Simple peritonitis (nonpuerperal)			8	4					2				14
VI. Nonvenereal diseases of the genito-urinary system and annexa.													
119. Acute nephritis		1	3	3									7
120. Bright's disease	1		16	7			1		3		1		29
122. Other diseases of the kidneys and annexa			2										2
123. Calculi of the urinary passages			2										2
126. Diseases of the prostate			1										1
129. Uterine tumor (noncancerous)				1									1
130. Other diseases of the uterus				1									1
VII. The puerperal state.													
134. Accidents of pregnancy				4									4
135. Puerperal hæmorrhage				7									7
136. Other accidents of labor		1		2									3
137. Puerperal septichæmia				5									5
138. Puerperal albuminuria and convulsions				3									3
VIII. Diseases of the skin and of the cellular tissue.													
142. Gangrene			1	1									2
143. Furuncle				1									1
144. Acute abscess			2										2
X. Malformations.													
150. Congenitel malformations (still-births not included):													
(1) Hydrocephalus				1									1
(2) Congenital malformations of the heart			1	1									2
(3) Other congenital malformations			1										1

Deaths, with causes, occurring among transients in the city of Manila (stillbirths not included)—Continued.

Causes of death.	Americans.		Filipinos.		Spaniards.		Other Europeans.		Chinese.		All others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
XI. Diseases of early infancy.													
151. Congenital debility, icterus, and sclerema	----	1	17	16	----	----	----	----	----	----	----	----	34
(1) Premature birth (not stillborn)	1	----	4	2	----	----	----	----	----	----	----	----	7
(2) Congenital debility	----	----	24	18	----	----	----	----	----	1	1	----	44
152. Other diseases peculiar to early infancy:													
(2) Other causes peculiar to early infancy	1	----	3	----	----	----	----	----	----	----	----	----	4
XII. Old age.													
154. Senility	----	----	6	2	----	----	----	----	----	----	----	----	8
XIII. Affections caused by external causes.													
155. Suicide by poison	----	----	----	1	----	----	----	----	----	----	----	----	1
167. Burns (conflagration excepted)	1	----	1	2	----	----	----	----	----	----	----	----	4
169. Accidental drowning	----	----	2	1	----	----	----	----	----	----	----	----	3
170. Traumatism by firearms	----	----	1	----	----	----	----	----	----	----	----	----	1
171. Traumatism by cutting or piercing instruments	----	----	2	1	----	----	----	----	----	----	1	----	4
172. Traumatism by fall	----	----	1	1	----	----	----	----	----	----	----	----	2
175. Traumatism by other crushing (vehicles, railways, landsides, etc.)	4	----	3	1	----	----	----	----	----	----	----	----	8
176. Injuries by animals	----	----	1	----	----	----	----	----	----	----	----	----	1
183. Homicide by cutting or piercing instruments	----	----	1	----	----	----	----	----	----	----	----	----	1
185. Fractures (cause not specified)	----	----	6	----	----	----	----	----	----	----	----	----	6
186. Other external violence	----	----	15	----	----	----	----	----	----	----	----	----	15
XIV. Ill-defined diseases.													
189. Cause of death not specified or ill-defined	----	----	6	4	1	----	----	----	----	----	----	----	11
Total	22	5	750	485	5	1	2	----	36	1	12	----	1,319
Grand total	27		1,235		6		2		37		12		1,319

DEATHS BY NATIONALITY, SEX, AND AGE.

Causes of death.	Under 30 days.												30 days to under 1 year.												1 year to under 2 years.											
	Americans.		Filipinos.		Spaniards.		Other Europeans		Chinese.		All others.		Americans.		Filipinos.		Spaniards.		Other Europeans		Chinese.		All others.		Americans.		Filipinos.		Spaniards.		Other Europeans		Chinese.		All others.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
I. General Diseases.																																				
1. Typhoid fever															2												1	3								
4. Malaria																1											2	1								
6. Measles															1													1								
8. Woophing cough															2	2																				
9. Diptheria and croup															2	4									1		6	7								
10. Influenza																1												1								
12. Asiatic cholera			1	2										1	8	6											14	8								
14. Dysentery															10	17			1								13	19								
18. Erysipelas			3												2	2											1	2								
20. Purulent infection and septichæmia															1	4											1									
24. Tetanus			60	36					2						1																					
27. Beriberi			19	26					1						430	328					1						12	5								
28. Tuberculosis of the lungs															3	1											9	13								
29. Acute miliary tuberculosis															2	1											1									
30. Tuberculous meningitis															7	10											9	15								
31. Abdominal tuberculosis															1												1	1								
34. Tuberculosis of other organs																											1									
35. Disseminated tuberculosis															1	1											1									
36. Rickets															1																					
37. Syphilis			1												5	1																				
49. Scurvy																											1	1								
55. Other general diseases			1	1																																
II. Diseases of the nervous system and of the organs of special sense.																																				
61. Simple meningitis			1	1											54	56		1									42	58								
64. Cerebral hæmorrhage, apoplexy			3	1											1												2	2								
69. Epilepsy																1																				
71. Convulsions of infants (under 5 years of age)	1		61	37					1						94	99					4						9	8					1			
74. Other diseases of the nervous system															1																					
76. Diseases of the ears																											1									

Deaths by nationality, sex, and age—Continued.

Causes of Death.	Under 30 days.												30 days to under 1 year.												1 year to under 2 years.											
	Americans.		Filipinos.		Spaniards.		Other Europeans		Chinese-		All others.		Americans.		Filipinos.		Spaniards.		Other Europeans		Chinese.		All others.		Americans.		Filipinos.		Spaniards.		Other Europeans		Chinese.		All others.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
III. Diseases of the circulatory system.																																				
78. Acute endocarditis															1												1									
79. Organic diseases of the heart															3	1											2									
84. Diseases of the lymphatic system (lymphangitis etc.)															1	1																				
IV. Diseases of the respiratory system.																																				
87. Diseases of the larynx																												1								
89. Acute bronchitis			7	6											230	169					1	1			1		70	63								
90. Chronic bronchitis													1		34	34											33	34								
91. Broncho-pneumonia			1	1									1	1	47	40											36	35								
92. Pneumonia			1												8	11											1	3								
93. Pleurisy															4	5											2	1								
94. Pulmonary congestion, pulmonary apoplexy			3	1																																
96. Asthma																											1									
V. Diseases of the digestive system.																																				
99. Other diseases of the mouth and annexa				1																																
103. Other diseases of the stomach (cancer excepted)															1	1											1									
104. Diarrhœa and enteritis (under 2 years)			6	5									3	1	127	114				1	1	3					100	87					2		1	
107. Intestinal parasites															1																					
108. Appendicitis and typhlitis																											1									
109. Aernias, intestinal obstructions			1													2	1																			
110. Other diseases of the intestines															4	4											3	2								
111. Acute yellow atrophy of the liver																1																				
117. Simple peritonitis (nonpuerperal)															2																					

VI. Nonvenereal diseases of the genito-urinary system and annexa.																																				
119. Acute nephritis			1	1										1	8	2											11	13								
120. Bright's disease															4	5											9	4								
124. Diseases of the bladder				1																																
VIII. Diseases of the skin and of the cellular tissue.																																				
142. Gangrene																											3	1								
143. Furuncle																												1								
144. Acute abscess															1																					
X. Malformations.																																				
150. Congenital malformations (stillbirths not included):																																				
(1) Hydrocephalus																												1								
(2) Congenital malformations of the heart			4	5											1																					
(3) Other congenital malformations			4																																	
XI. Diseases of early infancy.																																				
151. Congenital debility, icterus and sclerema		1	10	5										1	49	46							1				4	2						1		
(1) Premature birth (not stillborn)	1		20	15				1		1					1																					
(2) Congenital debility	2		238	182					4	3	1	1			36	37					1															
152. Other diseases peculiar to early infancy	1																																			
(1) Injuries at birth (not stillborn)		1	2																																	
(2) Other causes peculiar to early infancy	1		14	9																																
XIII. Affections caused by external causes.																																				
165b. Other acute poisonings															1																					
167. Burns (conflagration excepted)															2	2												1								
169. Accidental drowning																												1								
186. Other external violence																1																				
XIV. Ill-defined diseases.																																				
189. Cause of death not specified or ill-defined			1	1											1	2											1	3								
Total	6	2	463	337				1	8	4	1	1	5	5	1,196	1,013	1	1	1	1	8	4	1		2		406	398					3	1	1	
Grand total	8		800				1		12		2		10		2,209		2		2		12		1		2		804						4		1	

Deaths by nationality, sex, and age—Continued.

Causes of death.	2 years to 4 years.												5 years to 9 years.												10 years to 14 years.											
	Americans.		Filipinos.		Spaniards.		Other Europeans.		Chinese.		All others.		Americans.		Filipinos.		Spaniards.		Other Europeans.		Chinese.		All others.		Americans.		Filipinos.		Spaniards.		Other Europeans.		Chinese.		All others	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
I. General diseases.																																				
1. Typhoid fever			4	5											6	6											5	9								
3. Relapsing fever			1																																	
4. Malaria			1	3											2												1	1								
4a. Malaria cachexia			1	1																							1									
6. Measles			2	2																																
8. Whooping cough			1																																	
9. Diphtheria and croup			7	4				1								3												1								
10. Iufluenza			1													1											1									
12. Asiatic cholera			41	51										1	39	31											11	11								
14. Dysentery		1	36	20											5	10												3					1			
20. Purulent infection and septichæmia			1	2											1																					
24. Tetanus															5													1								
27. Beriberi			5	3											1	1											1	1								
28. Tuberculosis of the lungs			23	13											13	18											6	6								
29. Acute miliary tuberculosis															1																					
30. Tuberculous meningitis			14	28											5	8												1								
31. Abdominal tuberculosis			1	2												2												2								
32. Pott's disease															1	1											1	1								
34. Tuberculosis of other organs				2																							1									
35. Disseminated tuberculosis			2												1												1	1								
36. Rickets				2																																
45. Cancer and other malignant tumors of other organs and of organs not specified			1	1																																
47. Acute articular rheumatism													1																							
49. Scurvy				1																																
52. Addison's disease				1																																
55. Other general diseases				2																																

II. Diseases of the nervous system and of the organs of special sense.																																				
60. Encephalitis	1		1	1																																
61. Simple meningitis			33	45											8	8											1	1								
63. Other diseases of the spinal cord			1																																	
64. Cerebral hæmorrhage, apoplexy															1													1								
71. Convulsions of infants (under 5 years of age)			5	2																																
75. Other diseases of the eyes and their annexa				1																																
III. Diseases of the circulatory system.																																				
77. Pericarditis																												1								
78. Acute endocarditis																2																				
79. Organic diseases of the heart			1												1	2											4	2								
IV. Diseases of the respiratory system.																																				
88. Diseases of the thyreoid																											1									
89. Acute bronchitis			30	35												2																				
90. Chronic bronchitis			13	29																																
91. Broncho-pneumonia		1	38	38											9	8											3	1								
92. Pneumonia			4	2											2	2											1	1								
96. Asthma			1	1																																
V. Diseases of the digestive system.																																				
100. Diseases of the pharynx				1																																
103. Other diseases of the stomach (cancer excepted				1																																
105. Diarrhœa and enteritis (2 years and over)		1	55	40											3	5																				
107. Intestinal parasites			8	5											2	1																				
108. Appendicitis and typhlitis															1	1																				
109. Hernias, intestinal obstructions			1												1	1																				
110. Other diseases of the intestines			6	2											1												1									
115. Other diseases of the liver			1																																	
117. Simple peritonitis (nonpuerperal)																												1								
VI. Nonvenereal diseases of the genito-urinary system and annexa.																																				
119. Acute nephritis			12	6											2																					
120. Bright's disease			8	7											6	4											4	2								
122. Other diseases of the kidneys and annexa				2																							1									

Deaths by nationality, sex, and age—Continued.

Causes of death.	2 years to 4 years.												5 years to 9 years.												10 years to 14 years.											
	Americans.		Filipinos.		Spaniards.		Other Europeans.		Chinese.		All others.		Americans.		Filipinos.		Spaniards.		Other Europeans.		Chinese.		All others.		Americans.		Filipinos.		Spaniards.		Other Europeans.		Chinese.		All others.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
VIII. Diseases of the skin and of the cellular tissue.																																				
142. Gangrene			4	4											1	1																				
IX. Diseases of the bones and of the organs of locomotion.																																				
146. Diseases of the bones (tuberculosis excepted)			1																								1									
XI. Diseases of early infancy.																																				
151. Congenital debelity, icterus and sclerema	1		1																																	
XIII. Affections caused by external causes.																																				
167. Burns (conflagration excepted)			3	4											2	1																				
169. Accidental drowning			1												2	1											5									
171. Traumatism by cutting or piercing instruments				1																																
172. Traumatism by fall			1																				1													
175. Traumatism by other crushing (vehicles, railways, landslide, etc.)															3												2									
186. Other external violence			1																																	
XIV. Ill-defined diseases.																																				
189. Cause of death not specified or ill-defined			2	1																																
Total	2	3	374	371				1					1	1	125	120							1				53	48					1			
Grand total	5		745				1						2		245								1				101						1			

Deaths by nationality, sex, and age—Continued.

Causes of death.	15 years to 19 years.												20 years to 29 years.												30 years to 39 years.											
	Americans.		Filipinos.		Spaniards.		Other Europeans		Chinese.		All others.		Americans.		Filipinos.		Spaniards.		Other Europeans		Chinese.		All others.		Americans.		Filipinos.		Spaniards.		Other Europeans		Chinese.		All others.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
I. General diseases.																																				
1. Typhoid fever			15	14					1						18	18							1				8	2					1			
4. Malaria			1						2						6	4					2		1				6	5					2			
9. Diphtheria and croup																														1						
12. Asiatic cholera			12	7					2						50	46					3				1		41	34					9	1		
14. Dysentery			4						1						3	1							1				2	2								
17. Leprosy			1												1													1								
19. Other epidemic diseases															2																					
20. Purulent infection and septichæmia			2	1											9						1						1	1								
23. Rabies				1																																
24. Tetanus			4						1						3	1											1	2					2			
27. Beriberi				2											5	18					1						4	13					2			
28. Tuberculosis of the lungs			42	29	1				3						173	130	1				5						121	140					12	1	1	
29. Acute miliary tuberculosis			2												2	4											2									
30. Tuberculous meningitis			3												1	3					1						1									
31. Abdominal tuberculosis			1												1	4											2	2								
33. White swellings																												1								
34. Tuberculosis of other organs																											2									
35. Disseminated tuberculosis															8	5											5	2								
37. Syphilis																																	2			
40. Cancer and other malignant tumors of the stomach, liver			1												3	1											6								1	
41. Cancer and other malignant tumors of the peritonæum, intestines, rectum																											1									
42. Cancer and other malignant tumors of the female genital organs				1												1												3								
45. Cancer and other malignant tumors of other organs and of organs not specified															2													1								
47. Acute articular rheumatism									1																											
48. Chronic rheumatism and gout																												1								
50. Diabetes																											1						1			
53. Leuchæmia																												1								
55. Other general diseases																												1								

Deaths by nationality, sex, and age—Continued.

Causes of death.	15 years to 19 years.												20 years to 29 years.												30 years to 39 years.											
	Americans.		Filipinos.		Spaniards.		Other Europeans		Chinese.		All others.		Americans.		Filipinos.		Spaniards.		Other Europeans		Chinese.		All others.		Americans.		Filipinos.		Spaniards.		Other Europeans		Chinese.		All others.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
II. Diseases of the nervous system and of the organs of special sense.																																				
60. Encephalitis																2																				
61. Simple meningitis			5												3	1											3									
64. Cerebral hæmorrhage, apoplexy			1												3	3									1		6	2					1			
65. Softening of the brain																												1					3			
66. Paralysis without specified cause																												1								
68. Other forms of mental alienation															6												8	1				1				
69. Epilepsy															1	1																				
70. Convulsions (nonpuerperal) (5 years and over)																						1														
III. Diseases of the circulatory system.																																				
78. Acute endocarditis			1	1											2			1									2				1					
79. Organic diseases of the heart			4	2					1						12	7		1							1		5	12					7		1	
80. Angina pectoris			1												5	1											4	2	1							
81. Diseases of the arteries, atheroma, aneurysm, etc																									1		1						1			
82. Embolism and thrombosis																1											1	1								
84. Diseases of the lymphatic system (lymphangitis, etc)															1																					
85. Hæmorrhage; other diseases of the circulatory system																											2	1								
IV. Diseases of the respiratory system.																																				
90. Chronic bronchitis			1	1												1																				
91. Broncho-pneumonia			2												3	3											1	4								
92. Pneumonia			3	1											6	6									1		1	1							1	
93. Pleurisy															3	2											2									
94. Pulmonary congestion, pulmonary apoplexy																1																				

96. Asthma			1													2											1									
98. Other diseases of the respiratory system (tuberculosis excepted)			1																									1								
V. Diseases of the digestive system.																																				
99. Other diseases of the mouth and annexa													1																							
102. Ulcer of the stomach															2												4	1	1				2			
103. Other diseases of the stomach (cancer excepted)															1	1											2	1								
105. Diarrhœa and enteritis (2 years and over)			1													1											1	1							1	
108. Appendicitis and typhlitis			2												2													1					1			
109. Hernias, intestinal obstructions			2	1											1	1											6									
110. Other diseases of the intestines																2									1											
111. Acute yellow atrophy of the liver				1											1	1											2									
113. Cirrhosis of the liver			1												1												3									
114. Biliary calculi															1																					
115. Other diseases of the liver			1												6	1											2	1								
117. Simple peritonitis (nonpuerperal)			1	2					1						4	5											3	2					1			
118. Other diseases of the digestive system (cancer and tuberculosis excepted)																												1								
VI. Nonvenereal diseases of the genito-urinary system and annexa.																																				
119. Acute nephritis																2					1						·1	6								
120. Bright's disease			2	2					2						7	7			1		2		1				6	13					2	1		
122. Other diseases of the kidneys and annexa																1											1									
123. Calculi of the urinary passages			1																																	
128. Uterine hæmorrahge (nonpuerperal)																												1								
130. Other diseases of the uterus				1												2												2								
131. Cysts and other tumors of the ovary																1																				
VII. The puerperal state.																																				
134. Accidents of pregnancy																3												3								
135. Puerperal hæmorrhage																7												11								
136. Other accidents of labor				1												2										1		6								
137. Puerperal septichæmia				1												10												10								
138. Puerperal albuminuria and convulsions																3												4								
VIII. Diseases of the skin and of the cellular tissue.																																				
143. Furuncle			1																																	
144. Acute abscess															1												1									

Deaths by nationality, sex, and age—Continued.

Causes of death.	15 years to 19 years.												20 years to 29 years.												30 years to 39 years.											
	Americans.		Filipinos.		Spaniards.		Other Europeans		Chinese.		All others.		Americans.		Filipinos.		Spaniards.		Other Europeans		Chinese.		All others.		Americans.		Filipinos.		Spaniards.		Other Europeans		Chinese.		All others.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
IX. Diseases of the bones and of the organs of locomotion.																																				
146. Diseases of the bones (tuberculosis excepted)																1																				
XIII. Affections caused by external causes.																																				
155. Suicide by poison				1											2													1								
160. Suicide by cutting or piercing instruments															1																					
165b. Other acute poisonings										1											1															
167. Burns (conflagration excepted)																												1								
169. Accidental drowning			2	1											1												3									
170. Traumatism by firearms															1																					
171. Traumatism by cutting or piercing instruments															1								1				1									
172. Traumatism by fall															3													1								
174. Traumatism by machines															1																					
175. Traumaitsm by other crushing, (vehicles, railways, landslides, etc.)															2										1											
176. Injuries by animals																											1									
182. Homicide by firearms																									1		1									
183. Homicide by cutting or piercing intruments			1	2											2	5											1						1			
185. Fractures (cause not specified)			1												3												2									
186. Other external violence			1												9												7									
XIV. Ill-defined diseases.																																				
189. Cause of death not specified or ill-defined			3													6		1									3	1					1			
Total			128	75	1				15	1			1		385	329	1	3	1		17	1	5		8	1	292	307	2	1	1	1	51	3	5	
Grand total	------		203		1		------		16		------		1		714		4		1		18		5		9		599		3		2		54		5	

Deaths by nationality, sex, and age—Continued.

Causes of death.	40 years to 49 years.												50 years to 59 years.												60 years to 69 years.											
	Americans.		Filipinos.		Spaniards.		Other Europeans		Chinese.		All others.		Americans.		Filipinos.		Spaniards.		Other Europeans		Chinese.		All others.		Americans.		Filipinos.		Spaniards.		Other Europeans		Chinese.		All others.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
I. General diseases.																																				
1. Typhoid fever			5								1						1						1				1	1								
4. Malaria			2	1					2						5	4																				
4a. Malarial cachexia			1																																	
5. Smallpox			1																																	
10. Influenza			1												1																					
12. Asiatic cholera			31	16					9						12	7					3						14	10					1			
14. Dysentery				2					1																		3	6								
17. Leprosy			1																									1								
18. Erysipelas																1																				
20. Purulent infection and septichæmia			2	3											2	1									1		1									
24. Tetanus			1						3						1												1									
27. Beriberi			1	2					8						5	1											1									
28. Tuberculosis of the lungs	1		110	101	1				14		1				82	61					16						70	52	1				2			
29. Acute miliary tuberculosis			1	1											3	1											2									
30. Tuberculosis meningitis			1																								1									
31. Abdominal tuberculosis			4	4					1						2	4											1	6								
33. White swellings							1																													
35. Disseminated tuberculosis			2	1											1		1										2	1								
37. Syphilis			1						1																											
39. Cancer and other malignant tumors of the buccal cavity				1					1																			2								
40. Cancer and other malignant tumors of the stomach, liver			4	2					1						3	2	1											1			1					
41. Cancer and other malignant tumors of the peritonæum, intestines, rectum				1																																
42. Cancer and other malignant tumors of the female genital organs				2												4												3								
43. Cancer and other malignant tumors of the breast				3																																
44. Cancer and other malignant tumors of the skin															1												1									

Deaths by nationality, sex, and age—Continued.

Causes of death.	40 years to 49 years.												50 years to 59 years.												60 years to 69 years.											
	Americans.		Filipinos.		Spaniards.		Other Europeans		Chinese.		All others.		Americans.		Filipinos.		Spaniards.		Other Europeans		Chinese.		All others.		Americans.		Filipinos.		Spaniards.		Other Europeans		Chinese.		All others.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
I. General diseases—Continued.																																				
45. Cancer and other malignant tumors of other organs and of organs not specified	1		1												4	3											2	1	3							
47. Acute articular rheumatism									1																											
48. Chronic rheumatism and gout				1											2						1						2									
50. Diabetes			1	1					2					1	2												1	2								
51. Exopthalmic goitre				1												1					1															
53. Leuchæmia			1																																	
54. Anæmia, chlorosis																1		1									2	1								
56. Alcoholism (acute or chronic)	3														1																					
II. Diseases of the nervous system and of the organs of special sense.																																				
61. Simple meningitis			1												2	1												2								
63. Other diseases of the spinal cord																													1							
64. Cerebral hæmorrhage, apoplexy			7	7					3		1				13	7					1						16	3					3			
65. Softening of the brain									4							1					1						1									
66. Paralysis without specified cause			1	1											2	2											6	2	1							
68. Other forms of mental alienation			3					1							3																					
73. Hysteria							1																													
III. Diseases of the circulatory system.																																				
78. Acute endocaditis			2						1																		1									
79. Organic diseases of the heart	2		7	10	2		1		18	1					6	5					6	1			1		3	8	1				4			
80. Angina pectoris	1		2	3	1										3	2											2									
81. Diseases of the arteries, atheroma, aneurysm, etc			2	1					6						2	1					7						2									
82. Embolism and thrombosis																		1										1								

IV. Diseases of the respiratory system.																																				
89. Acute bronchitis																																	1			
90. Chronic bronchitis									2						1	3					4						3	4					1			
91. Broncho-pneumonia			3	1											1	1											1	1								
92. Pneumonia	1		5	1			1								3												3									
93. Pleurisy																1												1								
94. Pulmonary congestion, pulmonary apoplexy																1											1									
96. Asthma				1											1													1	1				1			
97. Pulmonary emphysema			1												1																					
V. Diseases of the digestive system.																																				
99. Other diseases of the mouth and annexa					1																															
101. Diseases of the œsophagus																											1									
102. Ulcer of the stomach	1		1	1	1										3													1								
103. Other diseases of the stomach (cancer excepted)			2												1	2																				
105. Diarrhœa and enteritis (2 years and over)			1	2					1						1	3					1						1	1								
108. Appendicitis and typhlitis			1												1													1			1					
109. Hernias, intestinal obstructions			3												1						1						2									
110. Other diseases of the intestines				1											1																					
111. Acute yellow atrophy of the liver				1																								1								
113. Cirrhosis of the liver				1					2						1	4					1						2	2								
114. Biliary calculi				1																																
115. Other diseases of the liver	1		3												1	1	1										1	1								
117. Simple peritonitis (nonpuerperal)			3	2											1	1																				
VI. Nonvenereal diseases of the genito-urinary system and annexa.																																				
119. Acute nephritis			1	1											1	1																				
120. Bright's disease	2		8	16					3						8	11	2				1						15	14	1							1
122. Other diseases of the kidneys and annexa																2																				
123. Calculi of the urinary passages															1																					
126. Diseases of the prostate															1												1									
127. Nonvenereal diseases of the male genital organs				1																																
128. Uterine hæmorrhage (nonpuerperal)				1																																
129. Uterine tumor (noncancerous)																												1								
130. Other diseases of the uterus																												1								
VII. The puerperal state.																																				
134. Accidents of pregnancy				1																																
135. Puerperal hæmorrhage				2																																
137. Puerperal septichæmia				2																																

Deaths by nationality, sex, and age—Continued.

Causes of death.	40 years to 49 years.												50 years to 59 years.												60 years to 69 years.											
	Americans.		Filipinos.		Spaniards.		Other Europeans		Chinese.		All others.		Americans.		Filipinos.		Spaniards.		Other Europeans		Chinese.		All others.		Americans.		Filipinos.		Spaniards.		Other Europeans		Chinese.		All others.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
VIII. Diseases of the skin and of the cellular tissue.																																				
142. Gangrene			1																									1								
144. Acute abscess			2												2																					
XIII. Affections caused by external causes.																																				
157. Suicide by hanging or strangulation									1																											
160. Suicide by cutting or piercing instruments			1																																	
167. Burns (conflagration excepted)	1																											1								
169. Accidental drowning				1					1												1						1									
172. Traumatism by fall			1	1																					1											
175. Traumatism by other crushing (vehicles, railways, landslides, etc.)	2												1		1												1	1								
183. Homicide by cutting or piercing instruments	1																																			
184. Homicide by other means																																				
185. Fractures (cause not specified)																					1						1									
186. Other external violence			5																																	
XIV. Ill-defined diseases.																																				
187. Ill-defined organic diseases																1																				
189. Cause of death not specified or ill-defined			4	2					1						1												7	2								
Total	17		243	205	6		4	1	87	1	3		1	1	191	142	6	2			46	1	1		3		177	138	9		2		13			1
Grand total	17		448		6		5		88		3		2		333		8		------		47		1		3		315		9		2		13		1	

DEATHS BY NATIONALITY, SEX, AND AGE.

Causes of death.	70 years and over.												Unknown.												Total.												Grand total.
	Americans.		Filipinos.		Spaniards.		Other Europeans.		Chinese.		All others.		Americans.		Filipinos.		Spaniards.		Other Europeans.		Chinese.		All others.		Americans.		Filipinos.		Spaniards.		Other Europeans.		Chinese.		All others.		
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
I. General diseases.																																					
1. Typhoid fever				1																							65	59	1				2		3		130
3. Relapsing fever																											1										1
4. Malaria			1																								27	20					8		1		56
4a. Malaria cachexia				1																							3	2									5
5. Smallpox																											1										1
6. Measles																											3	3									6
8. Whooping cough																											3	2									5
9. Diphteria and croup																									1		15	19		1		1					37
10. Influenza			1	2																							5	5									10
12. Asiatic cholera			10	11																					1	2	284	240					27	1			555
14. Dysentery			1	1																						1	77	81			1		3		1		164
17. Leprosy			1																								4	2									6
18. Erysipelas																											6	5									11
19. Other epidemic diseases																											2										2
20. Purulent infection and septichæmia				1																					1		21	13					1				36
23. Rabies																												1									1
24. Tetonus				1																							77	41					8				126
27. Beriberi																											484	400					13				897
28. Tuberculosis of the lungs			27	19											1	1									1		680	584	4				52	1	2		1,324
29. Acute miliary tuberculosis																											16	7									23
30. Tuberculous meningitis																											42	65					1				108
31. Abdominal tuberculosis			1																								15	27					1				43
32. Pott's disease																											2	2									4
33. White swellings																												1			1						2
34. Tuberculosis of other organs																											4	2									6
35. Disseminated tuberculosis																											24	11	1								36
36. Rickets																											1	2									3
37. Syphilis																											7	1					3				11
39. Cancer and other malignant tumors of the buccal cavity			1	1																							1	4					1				6
40. Cancer and other malignant tumors of the stomach, liver																											17	6	1		1		1		1		27

Deaths by nationality, sex, and age—Continued.

Causes of death.	70 years and over.												Unknown.												Total.												Grand total.
	Americans.		Filipinos.		Spaniards.		Other Europeans		Chinese.		All others.		Americans.		Filipinos.		Spaniards.		Other Europeans		Chinese.		All others.		Americans.		Filipinos.		Spaniards.		Other Europeans		Chinese.		All others.		
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
I. General diseases—Continued.																																					
41. Cancer and other malignant tumors of the peritonæum, intestines, rectum																											1	1									2
42. Cancer and other malignant tumors of the female genital organs																												14									14
43. Cancer and other malignant tumors of the breast				1																								4									4
44. Cancer and other malignant tumors of the skin				1																							2	1									3
45. Cancer and other malignant tumors of other organs and of organs not specified																									1		10	6	3								20
47. Acute articular rhematism																									1								2				3
48. Chronic rheumatism and gout			5	2																							9	4					1				14
49. Scurvy																											1	2									3
50. Diabetes				1	2																					1	5	4	2				3				15
51. Exopthalmic goitre																												2					1				3
52. Addison's disease																												1									1
53. Leuchæmia			1																								2	1									3
54. Anæmia, chlorosis				2																							2	4		1							7
55. Other general diseases																											1	4									5
56. Alcoholism (acute or chronic)																									3		1										4
II. Diseases of the nervous system and of the organs of special sense.																																					
60. Encephalitis																									1		1	3									5
61. Simple meningitis																											153	173		1							327
63. Other diseases of the spinal cord																											1		1								2
64. Cerebral hæmorrhage, apoplexy			5	8											1	1									1		59	35					8		1		104

65. Softening of the brain				1																							1	3					8				12
66. Paralysis without specified cause			4	6																							13	12	1								26
68. Other forms of mental alienation																											20	1				2					23
69. Epilepsy																											1	2									3
70. Convulsions (nonpuerperal) (5 years and over)																															1						1
71. Convulsions of infants (under 5 years of age)																									1		169	146					6				322
73. Hysteria																															1						1
74. Other diseases of the nervous system																											1										1
75. Other diseases of the eyes and their annexa																												1									1
76. Diseases of the ears																											1										1
III. Diseases of the circulatory system.																																					
77. Pericarditis																												1									1
78. Acute endocarditis				1																							10	4		1	1		1				17
79. Organic diseases of the heart			5	4					1						3										4		56	53	3	1	1		37	2	1		158
80. Angina pectoris			2		1																				1		19	8	3								31
81. Diseases of the arteries, atheroma, aneurysm, etc			5	4																					1		12	6					14				33
82. Embolism and thrombosis				1																							1	4		1							6
84. Diseases of the lymphatic system (lymphangitis, etc.)																											2	1									3
85. Hæmorrhage; other diseases of the circulatory system																											2	1									3
IV. Diseases of the respiratory system.																																					
87. Diseases of the larynx																												1									1
88. Diseases of the thyreoid body																											1										1
89. Acute bronchitis																									1		337	275					2	1			616
90. Chronic bronchitis			4	7	1																				1		89	113	1				7				211
91. Broncho-pneumonia			4	1																					1	2	149	134									286
92. Pneumonia			2	4																					2		40	32			1				1		76
93. Pleurisy																											11	10									21
94. Pulmonary congestion, pulmonary appoplexy				1																							4	4									8
96. Asthma			1	3																							6	8	1				1				16
97. Pulmonary emphysema			1																								3										3
98. Other diseases of the respiratory system (tuberculosis excepted)																											1	1									2

Deaths by nationality, sex, and age—Continued.

Causes of death.	70 years and over.												Unknown.												Total.												Grand total.
	Americans.		Filipinos.		Spaniards.		Other Europeans		Chinese.		All others.		Americans.		Filipinos.		Spaniards.		Other Europeans		Chinese.		All others.		Americans.		Filipinos.		Spaniards.		Other Europeans		Chinese.		All others.		
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
V. Diseases of the digestive system.																																					
99. Other diseases of the mouth annexa																									1			1	1								3
100. Diseases of the pharynx																												1									1
101. Diseases of the œsophagus																											1										1
102. Ulcer of the stomach			2																						1		12	3	2				2				20
103. Other diseases of the stomach (cancer excepted)				1																							8	7									15
104. Diarrhœa and enteritis (under 2 years)																									3	1	233	206				1	3	3	1		451
105. Diarrhœa and entiritis (2 years and over)			5	3																						1	68	56					2		1		128
107. Intestinal parasites																											11	6									17
108. Appendicitis and typhlitis																											8	3			1		1				13
109. Hernias, intestinal obstructions																											18	6	1				1				26
110. Other diseases of the intestines				1																					1		16	11									28
111. Acute yellow atrophy of the liver																											3	5									8
113. Cirrhosis of the liver																											8	7					3				18
114. Biliary calculi			1	1																							2	2									4
115. Other diseases of the liver		1																							1	1	15	4	1								22
117. Simple peritonitis (nonpuerperal)																											14	3					2				29
118. Other diseases of the digestive system (cancer and tuberculosis excepted)																												1									1

VI. Nonvenereal diseases of the genito-urinary system and annexa.																																					
119. Acute nephritis				2																						1	37	34					1				73
120. Bright's disease			10	10																					2		87	95	3		1		10	1	1	1	201
122. Other diseases of the kidneys and annexa																1											2	6									8
123. Calculi of the urinary passages																1											2	1									3
124. Diseases of the bladder																												1									1
126. Diseases of the prostate																											2										2
128. Uterine hæmorrhage (nonpuerperal)																												3									3
129. Uterine tumor (noncancerous)																												1									1
130. Other diseases of the uterus																												6									6
131. Cysts and other tumors of the ovary																												1									1
VII. The puerperal state.																																					
134. Accidents of pregnancy																												7									7
135. Puerperal hæmorrhage																												22									22
136. Other accidents of labor																										1		9									10
137. Puerperal septichæmia																												23									23
138. Puerperal albuminuria and convulsions																												7									7
VIII. Diseases of the skin and of the cellular tissue.																																					
142. Gangrene				1																							9	8									17
143. Furuncle																											1	1									2
144. Acute abscess																											7										7
IX. Diseases of the bones and of the organs of locomotion.																																					
146. Diseases of the bones (tuberculosis excepted)				1																							2	2									4
X. Malformations.																																					
150. Congenital malformations (stillbirths not included).																																					
(1) Hydrocephalus																												1									1
(2) Congenital malformations of the heart																											5	5									10
(3) Other congenital malformations																											4										4

Deaths by nationality, sex, and age—Continued.

Causes of death.	70 years and over.												Unknown.												Total.												Grand total.
	Americans.		Filipinos.		Spaniards.		Other Europeans		Chinese.		All others.		Americans.		Filipinos.		Spaniards.		Other Europeans		Chinese.		All others.		Americans.		Filipinos.		Spaniards.		Other Europeans		Chinese.		All others.		
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
XI. Diseases of early infancy.																																					
151. Congenital debility, icterus and sclerema																									1	2	64	53						1	1		122
(1) Premature birth (not stillborn)																									1		21	15				1		1			39
(2) Congenital debility																									2		274	219					5	3	1	1	505
152. Other diseases peculiar to early infancy																									1												1
(1) Injuries at birth (not stillborn)																										1	2										3
(2) Other causes peculiar to early infancy																									1		14	9									24
XII. Old age.																																					
154. Senility			125	223		1			1																		125	223		1			1				350
XIII. Affections caused by external causes.																																					
155. Suicide by poison																											2	2									4
157. Suicide by hanging or strangulation																																	1				1
160. Suicide by cutting or piercing instruments																											2										2
165b. Other acute poisonings																											1						1	1			3
167. Burns (conflagration excepted)																									1		7	10									18
169. Accidental drowning															1						1						16	4					3				23
170. Traumatism by firearms																											1										1
171. Traumatism by cutting or piercing instruments																											2	1							1		4
172. Traumatism by fall				1																					1		5	3							1		10
174. Traumatism by machines																											1										1

175. Traumatism by other crushing (vehicles, railways, landslides, etc.)															1										4		10	1									15
176. Injuries by animals																											1										1
180. Lightning															1												1										1
182. Homicide by firearms																									1			1									2
183. Homicide by cutting or piercing instruments																									1		4	7					1				13
184. Homicide by other means			1																								1						1				2
185. Fractures (cause not specified)			1																								8										8
186. Other external violence			1																								24	1									25
XIV. Ill-defined diseases.																																					
187. Ill-defined organic diseases																												1									1
189. Cause of death not specified or ill-defined			1												1						1						25	18		1			3				47
Total		1	229	330	4	1			2						9	4					2				46	14	4,271	3,817	30	8	9	5	253	16	18	2	8,489
Grand total	1		559		5				2						13						2				60		8,088		38		14		269		20		[a] 8,489

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[a] Included Filipino 3 males and 1 female, and 1 chinese male, permanent residence unknown.

DEATHS, BY OCCUPATION.

Occupation.	Number.	
	Male.	Female.
Professional:		
Architects, artists, teachers of art, etc	8	2
Clergymen, priests, nuns, etc	13	2
Engineers and surveyors	1	
Journalists	3	
Lawyers	5	
Musicians and teachers of music	11	1
Nurses and midwives		4
Physicians and surgeons	4	
Teachers (schools)	10	6
Others of this class	4	
Clerical and official:		
Bookeepers, clerks, and copyists	109	1
Bankers, brokers, and official of companies	4	
Collectors, auctioneers, and agents	6	
Stenographers and typewriters	4	
Telegraph and telephone operators	2	1
Others of this class	5	
Mercantile and trading:		
Apothecaries, pharmacists, etc	3	1
Commercial travellers	2	5
Merchants and dealers	69	3
Hucksters and peddlers	2	4
Shopkeepers	30	69
Others of this class	1	
Public entertainment:		
Hotel and boarding house keepers		
Saloon keepers, liquor dealers, bartenders and restaurant keepers	4	
Personal service; police and military:		
Barbers and hairdressers	27	
Janitors and sextons	15	
Policemen, watchmen and detectives	12	
Soldiers, sailors and marines	9	
Others of this class	5	
Laboring and servant:		
Laborers (not agricultural)	536	7
Launderers	9	188
Servants	82	37
Manufacturing and mechanical industry:		
Artificial flower and paper box makers		
Bakers and confectioners	3	
Blacksmiths	12	
Boot, shoe, and slipper makers	11	1
Brewers, distillers, and rectifiers		
Butchers	1	
Cabinetmakers and upholsterers	1	
Carpenters and joiners	84	
Cigar makers and tobacco workers	46	67
Clock and watch repairers, jewellers, etc	16	
Compositors, printers, etc	18	3
Coopers		
Embroiderers (gold, silk, etc.)	1	14
Engineers and firemen (not locomotive)	25	
Glass blowers and glass workers		
Hat and cap makers	9	1
Iron and steel workers	2	
Leather makers		
Leather workers	1	
Machinists	14	
Marble and stone cutters	5	
Masons (brick and stone)	5	
Mill and factory operatives (textiles)		
Millers (flour and grist)		
Milliners		
Painters, glaziers, and varnishers	34	
Plumbers, gas and steam fitters	5	
Tailors, dressmakers and seamsters	41	197
Tinners and tinware makers	8	
Others of this class	24	8

Deaths, by occupation—Continued.

Occupation.	Number.	
	Male.	Female.
Agriculture, transportation and other outdoor:		
Boatmen and canalmen	29	
Draymen, drivers and teamsters	88	
Farmers, planters and farm laborers	79	5
Gardeners, florists, nurserymen, etc	12	3
Livery stable keepers and hostlers		
Lumbermen and raftsmen	2	
Miners and quarrymen	3	
Sailors, pilots, fishermen and oystermen	92	4
Steam railroad employees	1	
Stok raisers, herders and drovers	1	
Others of this class	12	
All other occupations	133	59
Total	1,813	693
Grand total	2,506	

INFANT MORTALITY.

Causes of death.	Under 24 hours.	24 hours to under 36 hours.	36 hours to under 48 hours.	48 hours to under 14 days.	14 days to under 1 year.	Total.
Abscess formed on the axila					1	1
Abscess pyæmic					1	1
Acute catarrhal colitis					1	1
Acute hepatitis					1	1
Acute yellow atrophy of the liver					1	1
Anæmia, secondary, æchymosis abdominal; atelectasis of the lungs				1	2	3
Anencephalus	1					1
Asphyxia neonatorum	13					13
Occlusion of trachea by a lanzone					1	1
Aspiration of food into the bronchioles; congestion and œdema of the meninges; slight follicular colitis					1	1
Atelectasis of the kidneys				1		1
Atelectasis, congenital				1		1
Athrepsia					49	49
Infantum, complicated with bronchitis					1	1
Parrot					3	3
Beriberi infantile		1		21	783	805
Bronchitis:						
Acute				3	381	384
Capillary					27	27
Chronic					71	71
Bronchopneumonia				1	90	91
Leg postatic and acute follicular ileocolitis					2	2
Burns					4	4
Cachexia for septichæmia					1	1
Cellulitis of the neck					1	1
Cerebral hæmorrhage	1					1
Due to forceps				1		1
Internal and basal. Patent ductus arteriosus and foramen ovale				1		1
Cerebral congestion and hæmorrhage	1		1	1	1	4
Cholera:						
Asiatic				1	16	17
Infantum					1	1
Probable					1	1

Infant mortality—Continued.

Causes of death.	Under 24 hours.	24 hours to under 36 hours.	36 hours to under 48 hours.	48 hours to under 14 days.	14 days to under 1 year.	Total.
Chronic adhesive pericarditis					1	1
Chronic catarrhal colitis					1	1
Colibacilar fever					6	6
Colibacilosis (intestinal infection)					1	1
Compression of brain	1				1	2
Congenital debility	160	30	4	171	139	504
And athrepsia					1	1
Congenital failure of heart				1		1
Convulsions of children	5			61	230	296
Cyanosis				2		2
Debility, following some acute illness in province					1	1
Following measles					1	1
Diarrhœa and enteritis					34	34
Dilatation and hypertrophy of the heart					4	4
Diptheria					2	2
Toxæmia					4	4
Dysentery					28	28
Eczema, generelized and septichæmia					1	1
Enteritis				1	78	79
Enterocolitis					10	10
Epilepsy					1	1
Erysipelas					7	7
Exhaustion (following diarrhœa)?					1	1
Empyema					4	4
Gastritis					1	1
Gastrœnteritis				1	81	82
General peritonitis					1	1
General weakness			1	1		2
Hæmorrhage:						
Intraperitoneal; rupture of the liver	1					1
Meningeal; atelectasis of the lungs	1					1
Umbilical				4		4
Hæmophilia	1					1
Icterus				2	2	4
Melaena				1		1
Neonatorum	1			3	2	6
Hæmorrhagic:						
Cystitis				1		1
Diathesis (congenital)				1		1
Ileocolitis					2	2
Immaturity	1					1
Imperforate anus				1	2	3
Inanitation				2	3	5
Infantile atrophy					3	3
Intestinal obstruction				1		1
Due to atresia of rectum					1	1
Intestinal occlusion					3	3
Intestinal parasites					1	1
Malaria					1	1
Malformation, congenital				3		3
Malnutrition					30	30
Marasmus				1	58	59
Hæmorrhage; lobar pheumonia					1	1
Meningitis:						
Acute					49	49
Cerebral				1	6	7
Cerebrospinal					2	2
Grippal					1	1
Simple					55	55
For gastrointestinal intoxication					1	1
Tuberculous					17	17
Pnemonia					1	1
Myocarditis, acute					1	1
Nephritis					7	7
Acute					13	13
Empyema, left					1	1
Chronic					1	1

Infant mortality—Continued.

Causes of death.	Under 24 hours.	24 hours to under 36 hours.	36 hours to under 48 hours.	48 hours to under 14 days.	14 days to under 1 year.	Total.
Persistent of foramen Botallo				2	1	3
Organic cardiac disease (congenital)					1	1
Pertussis, bronchopneumonia, apoplexia cerebralis					1	1
Pleurisy					4	4
Pneumonia				1	4	5
Lobar					13	13
Right tuberculous					1	1
Metastatic, suppurative peribronchitis					1	1
Premature birth	22	3	1	3	2	31
Congenital	4	2		1	1	8
Pulmonary congestion	1				1	2
And apoplexy	1		1			2
Ricket					1	1
Scourvy					1	1
Septic cervical adenitis					1	1
Septic mediastinitis originating infection on finger					1	1
Septichæmia					1	1
Burns, accidental					1	1
Stomatitis (Muguet)					1	1
Syphilis					2	2
Hereditary					2	2
Suppurative peritonitis					1	1
Tetanus, umbilical				97	2	99
Tuberculosis:						
Generalized					4	4
Of the intestines					1	1
Of the lungs					1	1
Miliary					1	1
Pulmonary					1	1
Typhoid					2	2
Tumors of the brain					1	1
Undetermined				1	1	2
Whooping cough, pneumonia					4	4
Total	215	36	8	396	2,404	3,059

COMPARATIVE MORTALITY FROM JANUARY, 1901, TO DECEMBER, 1916, INCLUSIVE.

Month.	1901		1902		1903		1904	
	Deaths.	Annual death rate per 1,000.	Deaths.	Annual death rate per 1,000.	Deaths.	Annual death rate per 1,000.	Deaths.	Annual death rate per 1,000.
January	753	[a]36.25	760	[a]36.58	602	[a]28.98	796	[b]42.64
February	689	[a]36.72	706	[a]37.63	511	[a]27.23	709	[b]40.59
March	885	[a]42.60	770	[a]37.06	539	[a]25.94	751	[b]40.23
April	886	[a]44.07	1,327	[a]66.01	549	[a]27.31	748	[b]41.40
May	903	[a]43.47	1,688	[a]81.26	770	[a]37.06	766	[b]41.03
June	621	[a]30.89	1,418	[a]70.54	592	[a]29.45	800	[b]44.28
July	608	[a]29.27	2,223	[a]107.02	620	[b]33.21	866	[b]46.39
August	702	[a]33.79	1,712	[a]82.41	862	[b]46.17	1,032	[b]55.28
September	767	[a]38.15	1,132	[a]56.31	1,228	[b]67.97	1,064	[b]58.89
October	855	[a]41.16	927	[a]44.62	1,217	[b]65.19	1,018	[b]54.53
November	848	[a]42.18	1,035	[a]51.48	974	[b]53.91	957	[b]52.97
December	858	[a]41.30	753	[a]36.25	894	[b]47.89	794	[b]42.53
Total	9,375	[a]38.30	14,451	[a]59.04	9,358	[b]40.27	10,301	[b]46.83

[a] Death rate computed on population of 244,732 (Health Department census).
[b] Death rate computed on population of 219,941 (Official census, 1903).

Comparative mortality from January, 1901, to December, 1916, inclusive—Continued.

Month.	1905		1906		1907		1908	
	Deaths.	Annual death rate per 1, 000.	Deaths.	Annual death rate per 1, 000.	Deaths.	Annual death rate per 1, 000.	Deaths.	Annual death rate per 1, 000.
January	685	[b]36. 69	737	[b]39. 48	632	[c]33. 31	1, 117	[c]58. 87
February	608	[b]36. 05	595	[b]35. 28	473	[c]27. 60	733	[c]41. 29
March	563	[b]30. 15	600	[b]32. 14	464	[c]24. 45	720	[c]37. 94
April	530	[b]29. 33	555	[b]30. 72	416	[c]22. 65	626	[c]34. 09
May	526	[b]28. 18	600	[b]32. 14	462	[c]24. 35	633	[c]33. 86
June	593	[b]32. 82	693	[b]38. 36	402	[c]21. 89	678	[c]36. 92
July	747	[b]40. 01	1, 451	[b]77. 72	515	[c]27. 14	977	[c]51. 49
August	841	[b]45. 05	1, 182	[b]63. 31	653	[c]34. 41	1, 148	[c]60. 50
September	1, 013	[b]56. 07	835	[b]46. 22	768	[c]41. 82	1, 362	[c]74. 17
October	850	[b]45. 53	684	[b]36. 64	877	[c]46. 22	991	[c]52. 23
November	944	[b]52. 25	653	[b]36. 14	725	[c]39. 48	837	[c]45. 58
December	841	[b]45. 05	597	[b]31. 98	900	[c]47. 43	824	[c]43. 42
Total	8, 741	[b]39. 74	9, 182	[b]41. 74	7, 287	[c]32. 59	10, 646	[c]47. 62

Month.	1909		1910		1911		1912	
	Deaths.	Annual death rate per 1, 000.	Deaths.	Annual death rate per 1, 000.	Deaths.	Annual death rate per 1, 000.	Deaths.	Annual death rate per 1, 000.
January	720	[c]37. 94	729	[d]36. 64	653	[d]32. 82	698	[d]35. 08
February	616	[c]35. 94	638	[d]35. 50	536	[d]29. 82	611	[d]32. 82
March	618	[c]32. 57	642	[d]32. 26	574	[d]28. 85	732	[d]36. 79
April	550	[c]29. 95	594	[d]30. 85	547	[d]28. 41	671	[d]34. 84
May	544	[c]28. 67	604	[d]30. 35	609	[d]30. 60	701	[d]35. 23
June	552	[c]30. 06	646	[d]33. 55	693	[d]35. 99	605	[d]31. 42
July	691	[c]36. 41	799	[d]40. 15	830	[d]41. 71	689	[d]34. 63
August	679	[c]35. 78	731	[d]36. 74	878	[d]44. 13	705	[d]35. 43
September	649	[c]35. 34	664	[d]34. 48	741	[d]38. 48	661	[d]34. 33
October	700	[c]36. 89	705	[d]35. 43	686	[d]34. 48	633	[d]31. 81
November	778	[c]42. 37	642	[d]33. 34	782	[d]40. 61	573	[d]29. 76
December	839	[c]44. 22	635	[d]31. 91	698	[d]35. 08	540	[d]27. 14
Total	7, 936	[c]35. 50	8, 029	[d]34. 25	8, 227	[d]35. 09	7, 819	[d]33. 35

Month.	1913		1914		1915		1916	
	Deaths.	Annual death rate per 1, 000.	Deaths.	Annual death rate per 1, 000.	Deaths.	Annual death rate per 1, 000.	Deaths.	Annual death rate per 1, 000.
January	502	[d]25. 23	570	[f]25. 15	678	[f]29. 92	634	[f]27. 98
February	445	[d]24. 76	499	[f]24. 38	545	[f]26. 63	559	[f]26. 37
March	451	[d]22. 66	462	[f]20. 39	570	[f]25. 15	593	[f]26. 17
April	442	[d]22. 95	464	[f]21. 16	551	[f]25. 13	567	[f]25. 85
May	504	[d]25. 33	430	[f]18. 97	557	[f]24. 58	548	[f]24. 18
June	442	[d]22. 95	387	[f]17. 65	557	[f]25. 40	513	[f]23. 39
July	410	[e]19. 49	540	[f]23. 83	605	[f]26. 70	573	[f]25. 59
August	439	[e]20. 87	581	[f]25. 64	602	[f]26. 57	717	[f]31. 64
September	529	[e]25. 99	693	[f]31. 60	542	[f]24. 71	827	[f]37. 71
October	550	[e]26. 15	624	[f]27. 54	553	[f]24. 40	551	[f]24. 31
November	590	[e]28. 99	651	[f]29. 69	482	[f]21. 98	494	[f]22. 53
December	600	[e]28. 53	686	[f]30. 27	578	[f]25. 51	589	[f]25. 99
Total	5, 904	[e]24. 48	6, 587	[f]24. 67	6, 820	[f]25. 54	7, 165	[f]26. 84

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[b] Death rate computed on population of 219,941 (Official census, 1903).
[c] Death rate computed on population of 223,542 (Health census, 1907).
[d] Death rate computed on population of 234,409 (Health census, 1910).
[e] Death rate computed on estimated population 247,756.
[f] Death rate computed on population of 266,943 (Health census, 1914).

MORTALITY COMPARED WITH SAME PERIOD OF PREVIOUS YEARS.

Year.	First quarter.		Second quarter.		Third quarter.		Fourth quarter.	
	Deaths.	Annual death rate per 1,000.	Deaths.	Annual death rate per 1,000.	Deaths.	Annual death rate per 1,000.	Deaths.	Annual death rate per 1,000.
1901	2,327	38.58	2,410	39.52	2,077	33.69	2,561	41.54
1902	2,236	37.07	4,433	72.70	5,067	82.19	2,715	44.04
1903	1,652	27.39	1,911	31.34	2,710	48.91	3,085	55.68
1904	2,256	41.16	2,314	42.22	2,962	53.46	2,769	49.98
1905	1,856	34.24	1,649	30.09	2,601	46.94	2,635	47.56
1906	1,932	35.64	1,848	33.72	3,468	62.59	1,934	34.90
1907	1,569	28.48	1,280	22.98	1,936	34.38	2,502	44.43
1908	2,570	46.14	1,937	34.77	3,487	61.92	2,652	47.09
1909	1,954	35.47	1,646	29.55	2,019	35.85	2,317	41.14
1910	1,009	34.78	1,844	31.57	2,194	37.15	1,982	33.56
1911	1,763	30.52	1,849	31.65	2,449	41.47	2,166	36.68
1912	2,041	34.94	1,977	33.85	2,055	34.80	1,746	29.57
1913	1,398	24.20	1,388	23.76	1,378	22.08	1,740	27.88
1914	1,531	23.27	1,281	19.26	1,814	26.97	1,961	29.16
1915	1,793	27.25	1,665	25.03	1,749	26.01	1,613	23.98
1916	1,786	26.85	1,628	24.47	2,117	31.48	1,634	24.30

CHOLERA AND PLAGUE, CITY OF MANILA.

Nationality.	Cholera.				Plague.			
	Cases.		Deaths.		Cases.		Deaths.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
Americans	7	1	--------	1	--------	--------	--------	--------
Filipinos	628	527	270	216	--------	--------	--------	--------
Spaniards	1	1	--------	--------	--------	--------	--------	--------
Other Europeans	1	--------	--------	--------	--------	--------	--------	--------
Chinese	40	1	25	1	--------	--------	--------	--------
All others	7	--------	--------	--------	--------	--------	--------	--------
Total	684	530	295	218	--------	--------	--------	--------

District and age.	Cholera.		Plague.	
	Cases.	Death.	Cases.	Death.
Health Districts:				
No. 1, Intramuros	100	44	--------	--------
No. 2, Meisic	335	143	--------	--------
No. 4, Sampaloc	175	85	--------	--------
No. 5, Tondo	507	201	--------	--------
No. 6, Paco	97	40	--------	--------
Total	1,214	513	--------	--------
Ages:				
Under 1 year	19	13	--------	--------
1 year to 9 years	300	170	--------	--------
10 years to 19 years	151	42	--------	--------
20 years to 29 years	319	93	--------	--------
30 years to 39 years	199	76	--------	--------
40 years to 49 years	121	55	--------	--------
50 years and over	105	64	--------	--------
Unknown	--------	--------	--------	--------
Total	1,214	513	--------	--------

Cases found alive; Cholera, 1,008; plague, 0.
Cases found dead; Cholera, 206; plague, 0.

SMALLPOX, CITY OF MANILA.

One case and 1 death occurred during the period covered by this report.

Last case occurred February 29, 1916.

Last death occurred March 1, 1916.

VARIOLOID, CITY OF MANILA.

A total of 58 cases of varioloid occurred during the period covered by this report, 54 Filipinos and 4 Americans.

VARICELLA, CITY OF MANILA.

A total of 56 cases of varicella occurred during the period covered by this report, 51 Filipinos and 5 Americans.

TUBERCULOSIS CASES REPORTED IN THE CITY OF MANILA DURING THE FISCAL YEAR 1916.

[Closed January 12, 1917.]

Nationality.	Health districts.										Total.
	No. 1.		No. 2.		No. 4.		No. 5.		No. 6.		
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
Americans							1				1
Filipinos	128	78	281	246	165	88	458	436	102	88	2,070
Spaniards	1		1								2
Other Europeans	1										1
Chinese			7							1	8
All Others			1		1						2
Total	130	78	290	246	166	88	459	436	102	89	2,084

Also reported 228 males and 132 females, provincial cases; 10 males and 7 females, permanent residence unknown.

RAT CAMPAIGN OPERATIONS.

Number of spring traps set	369,336
Number of rats caught with spring traps	58,063
Number of wire traps set	11,917
Number of rats caught with wire traps	96
Number and kind of bait set (coconuts)	381,358
Number of rats caught by dogs	42
Number of poison portions placed	776,919
Number of rats found poisoned	3,035
Number of rats killed by clubs and other weapons	7,576
Number of rats found dead from other causes	920
Total number of rats otherwise caught or killed	69,732
Rats sent to Laboratory for examinations	64,944
Rats found positive for plague	[a] 1

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[a] Positive for plague, chronic type, not virulent.

REPORT OF SICK AND WOUNDED POOR ATTENDED BY MUNICIPAL PHYSICIANS.

Health districts and physicians.	Americans.				Foreigners.				Filipinos.			
	Adults.		Children.		Adults.		Children.		Adults.		Children.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
No. 1, Intramuros, Dr. V. Cavanna	6	----	----	----	26	1	----	----	1,160	990	342	347
No. 2, Meisic, Drs. F. Herrera and C. Reyes	3	----	1	----	1	----	----	----	261	205	243	139
No. 4, Sampaloc, Dr. F. Castañeda	2	----	----	----	----	----	----	----	585	872	605	596
No. 5, Tondo, Drs. V. Pantoja and P. Gabriel	1	----	----	----	2	----	----	----	973	767	676	628
No. 6, Paco, Dr. J. B. Cabarrús	----	----	----	----	1	----	----	----	258	278	261	220
Dr. Tee Han Kee	----	----	----	----	----	----	----	----	45	50	24	27
Total	12	----	1	----	30	1	----	----	3,282	3,162	2,151	1,957

Health districts and physicians.	Chinese.				Total.	Cured.		Deaths.		Visits.
	Adults.		Children.							
	Male.	Female.	Male.	Female.		Male.	Female.	Male.	Female.	
No. 1, Intramuros, Dr. V. Cavanna	----	----	----	----	2,872	506	482	9	11	6,127
No. 2, Meisic, Drs. F. Herrera and C. Reyes	4	----	1	----	858	272	255	4	1	4,952
No. 4, Sampaloc, Dr. F. Castañeda	----	----	----	----	2,660	133	183	47	36	3,355
No. 5, Tondo, Drs. V. Pantoja and P. Gabriel	14	----	----	----	3,061	147	90	4	3	4,073
No. 6, Paco, Dr. J. B. Cabarrús	----	----	----	----	1,018	276	265	6	8	1,871
Dr. Tee Han Kee	309	----	20	3	478	340	62	----	----	1,595
Total	327	----	21	3	10,947	1,674	1,337	70	59	21,973

CITY MORGUE REPORT.

Disposition.	Bodies.	Disposition.	Bodies.
Remaining from last year	68	Transferred to—	
Received	1,153	Army Morgue	6
Total	1,221	Ateneo Rizal	2
		Dental college	2
Buried by—		Government Museum	29
City	574	Provinces	82
Family	450	Santo Tomás University	9
		Remaining at end of the year	67
		Total	1,221

Report of sick and wounded poor attended by municipal physicians—Cont.

DISPOSITION OF DEAD BODIES.

Disposition.	Number.	Disposition.	Number.
Buried:		Otherwise disposed of:	
Balicbalic cemetery	992	Remaining in—	
Binondo cemetery	3,186	Ateneo Rizal	2
Chinese cemetery	293	Dental college	2
Norte cemetery	3,244	City morgue	59
Pandacan cemetery—		Mary Johnston Hospital (fœtus)	1
Filipino church	84	Private morgue	1
Roman catholic	32	Shipped to—	
Santa Ana cemetery	92	Spain	1
Singalong cemetery	850	United States	3
Otherwise disposed of:		Transferred to—	
Cremated	23	Government museum (stillbirths)	49
Remaining in—		Provinces	244
Army morgue	3	Total	[a]9,161

[1] Of this total there are 4 from Army morgue, 105 from city morgue, 1 from private morgue and 2 from Santo Tomas University morgue remaining from last year; 91 dead bodies brought from the provinces and 469 were stillbirths.

DISINTERNMENTS.

Cemetery.	Number.	Cemetery.	Number.
Balicbalic	19	Paco	102
Binondo	27	Santa Ana	1
Chinese	83	Santa Cruz	28
Loma	2	Tondo	3
Malate	1		
Norte	15	Total	281

GENERAL INSPECTIONS OF HOUSES, PREMISES, VAULTS, ETC., WITH IMPROVEMENTS ORDERED, WHITEWASHED, CLEANED, ETC., BY MEDICAL INSPECTORS, SANITARY INSPECTORS, AND ASSISTANT SANITARY INSPECTORS.

1.	Inspections of houses by sanitary inspectors	40,327
2.	Reinspections of houses for verification of work ordered	5,206
3.	Inspections of houses by assistant sanitary inspectors and sanitary policemen	186,921
4.	Reinspections of houses by assistant sanitary inspectors and sanitary policemen	51,605
5.	Houses ordered cleaned (written)	1,189
6.	Houses ordered cleaned (verbal)	33,283
7.	Houses cleaned	31,956
8.	Houses ordered whitewashed and painted	221
9.	Houses whitewashed and painted	213
11.	Houses recommended condemned and removed	14
12.	Houses condemned and removed	0
13.	Localities where "squatters" are located	0
14.	Samples of water, foods, etc., sent to laboratory	99,000
15.	Reports for same	50,981
16.	Fire-plugs opened or closed for sanitary purposes	0
17.	Hydrants recommended reopened	0
18.	Houses where garbage has not been removed for two days	1
19.	Persons reported sick to Municipal Physicians	13,527
20.	Cesspools and vaults ordered cleaned	12
21.	Cesspools cleaned	10
22.	Yards ordered cleaned	20,935
23.	Yards cleaned	20,417
24.	Yards ordered repaired (repaved, etc.)	39
25.	Yards repaired	34
26.	Cholera cases reported by sanitary inspectors	215
27.	Cholera cases found alive	1,366
28.	Cholera cases found dead	231
29.	Orders issued during the year	1,698
30.	Orders complied with during the year	1,345
31.	Orders awaiting action	201
32.	Orders pending in court	0

General inspections of houses, premises, vaults, etc.—Continued.

33. Average number of food tiendas in the districts	3,007
34. Persons convicted for violation of food prohibition orders	299
35. Average number of regular inspectors on duty	45
36. Average number of regular emergency inspectors on duty	17
37. Lepers sent to San Lazaro Hospital	76
38. Plague cases reported	1
39. Smallpox cases reported	1

REPORT OF DISINFECTIONS.

Causes for disinfections.	Number.	
	Disinfections.	Contacts.
Anthrax	1	
Bubonic plague, suspected	3	16
Cholera	1,116	118,257
Bacilli carrier	675	16,620
And gastroenteritis	3	6
Probably (postmortem ascariasis)	1	5
Suspected	245	13,935
And typhoid fever	1	3
And enteritis, acute	1	5
And tetanus	1	12
Diphtheria	101	634
And cholera bacilli carrier	1	6
And measles	1	
Bacilli carrier	60	735
And suspect cholera	1	4
And measles	8	13
Suspected	26	317
Dysentery bacillary	2	3
Enteritis bacillary	1	4
Glanders	2	
Suspected	1	2
Impetigo (contagious)	1	10
Leprosy	61	233
Suspected	8	29
Measles	221	1,023
And bronchopneumonia	1	
And nephritis	1	16
Suspected	1	10
Meningitis, tuberculous	17	61
Mumps	23	56
Suspected	1	2
Myocarditis infectious	1	
Paratyphoid	2	3
Puerperal septichæmia	2	11
Rabies	1	6
Rinderpest (carabao)	1	
Rubeola	1	
Smallpox, suspected	2	6
Tetanus	42	187
Suspected	1	11
Tuberculosis	380	1,425
Postmortem	3	18
Typhoid	128	1,080
Bacilli carrier	2	15
Infectious	2	5
Suspected	1	
Undetermined (cholera suspected)	1	18
Varicella	27	89
And diphtheria carrier	1	4
Varioloid	42	228
Whooping cough	1	4
And diphtheria suspected	1	6
Insanitary conditions	85,562	3,451
Total	88,790	158,584

REPORT OF ACTION TAKEN ON APPLICATIONS FOR LICENSES.

Approved	9,107
Disapproved	414
Total acted upon	9,521

CHOLERA IN THE PROVINCES.

[Closed January 22, 1917.]

Provinces and towns.	Deaths.	Cases.	Mortality.
Albay:			*Per ct.*
Albay	150	82	
Bacacay	14	9	
Bató	45	27	
Calolbon	25	16	
Camalig	6	4	
Guinobatan	29	21	
Libog	5	1	
Libon	19	10	
Ligao	19	16	
Malinao	35	14	
Oás	59	34	
Pandan	162	95	
Polanguí	21	10	
Rapurapu	28	14	
Tabaco	106	39	
Tiwí	2	1	
Vigá	145	93	
Virac	38	15	
Total	908	501	55.60
Ambos Camarines:			
Baao	50	31	
Basud	6	5	
Buhí	7	4	
Bulá	15	9	
Cabusáo	18	11	
Calabanga	26	13	
Camaligan	18	8	
Canaman	8	4	
Daet	86	60	
Gainzá	6	5	
Goá	1	1	
Indan	195	114	
Iriga	26	12	
Labo	254	173	
Lagonoy	1		
Libmanan	29	22	
Mambusao	2	2	
Magarao	13	8	
Milaor	5	4	
Minalabag	1	1	
Nabua	74	46	
Naga	101	65	
Pamplona	17	10	
Paracale	36	29	
Pasacao	3	3	
Pili	63	35	
Ragay	48	20	
Sagnay	18	9	
San Fernando	29	18	
San José	3	2	
San Vicente	34	28	
Talisay	48	25	
Tigaon	19	14	
Total	1,260	791	62.77
Antique:			
Dao	21	17	
San José	20	18	
Sibalon	4	3	
Total	45	38	84.44
Bataan:			
Abucay	88	70	
Bagongbayan	5	4	
Balanga	34	27	
Mariveles	3	2	
Moron	13	5	
Orani	38	26	
Orión	57	45	
Pilar	36	30	
Samal	6	6	
Total	280	215	76.78

Cholera in the provinces—Continued.

Provinces and towns.	Deaths.	Cases.	Mortality.
Batangas:			*Per ct.*
Alitagtag	1	1	
Batangas	38	28	
Bawang	32	28	
Ibaan	6	4	
Lipá	14	7	
Maricaban	10	3	
Rosario	15	13	
Santo Tomás	1		
Total	117	84	76.78
Bohol:			
Duero	48	18	
Jagna	2	2	
Mabini	8	5	
Valencia	4	3	
Total	62	28	45.16
Bulacan:			
Angat	12	6	
Baliwag	57	38	
Bigaá	6	4	
Bocawe	40	31	
Bulacán	97	65	
Calumpit	61	45	
Guiguinto	3	3	
Hagonoy	361	215	
Malolos	238	173	
Marilao	8	4	
Meycawayan	28	19	
Norzagaray	11	6	
Obando	53	38	
Paombong	62	42	
Polo	16	9	
Pulilan	29	25	
Quingwa	18	11	
San Rafael	9	2	
Santa Maria	5	5	
Total	1,114	741	66.51
Gagayan:			
Jimenez	4	1	25.00
Capiz:			
Capiz	24	21	
Dao	4	4	
Dumalag	20	17	
Iuisan	4	4	
Looc	75	23	
Panay	7	3	
Panitan	11	7	
Pilar	18	12	
Pontevedra	19	13	
Total	182	104	57.14
Cavite:			
Amadeo	1	1	
Bacoor	6	5	
Cavite	26	19	
Imus	11	9	
Indan	3	2	
Kawit	18	13	
Maragondon	63	39	
Mendez Nuñez	12	8	
Naic	77	54	
Rosario	44	35	
San Francisco de Malabon	29	11	
Tanzá	33	30	
Ternate	22	16	
Total	345	242	70.14
Cebu:			
Alegria	3	3	
Moalbual	12	6	
Total	15	9	60.00

Cholera in the provinces—Continued.

Provinces and towns.	Deaths.	Cases.	Mortality.
Culion:			*Per ct.*
Culion	3	2	66.66
Iloilo:			
Arevalo	27	22	
Balasan	8	7	
Banate	86	73	
Barotac	215	127	
Buenavista	28	15	
Cabatuan	58	35	
Dingle	20	18	
Dueñas	21	10	
Dumangas	210	116	
Guimbal	10	4	
Iloilo	383	296	
Janiuay	41	36	
Jaro	175	106	
Lambunao	41	9	
Leon	36	12	
Lorcha "Galicia"	4	2	
Lorcha enroute "Sara"	1	1	
Lucena	8	6	
Mandurriao	17	14	
Miagao	8	7	
Oton	56	32	
Passi	40	31	
Pototan	156	83	
San Joaquin	7	1	
San Miguel	56	41	
Santa Barbara	201	139	
Sara	154	71	
Tigbauan	103	81	
Total	2,170	1,395	64.28
Laguna:			
Alaminos	3		
Cabuyao	2	2	
Calamba	2	2	
Cavinti	4	3	
Lilio	2	1	
Los Baños	4	2	
Lumban	8	7	
Magdalena	2	2	
Majayjay	9	8	
Nagcarlan	23	22	
Paete	10	6	
Pagsanhan	23	15	
Pakil	1	1	
Pangil	23	17	
Pila	42	22	
San Pablo	2	1	
Santa Cruz	50	41	
Santa Rosa	14	12	
Total	224	164	73.21
Leyte:			
Alangalang	32	25	
Babatngon	3	1	
Barugo	67	48	
Burauen	14	12	
Carigara	26	25	
Dagami	13	9	
Jaro	12	10	
Palo	72	42	
San Mignel	11	11	
Tacloban	68	53	
Tanauan	4	2	
Total	322	238	73.91
Masbate:			
Milagros	8	2	25.00

Cholera in the provinces—Continued.

Provinces and towns.	Deaths.	Cases.	Mortality.
Mindanao:			*Per ct.*
Bacolod		1	
Dipoloc	19	11	
Lanao	617	457	
Pantar	1	1	
Pualas	8	6	
Taraca	74	50	
Total	719	526	73.15
Mindoro:			
Calapan	3	2	
Lubang	2	1	
Pinamalayan	12	8	
Puerto Galera	8	5	
San José	6	4	
Total	31	20	64.51
Misamis:			
Initao	5	4	
Jimenez	29	16	
Misamis	229	139	
Oroquieta	126	69	
Plaridel	2	2	
Total	391	230	58.82
Occidental Negros:			
Bacolod	98	85	
Bago	133	56	
Bató	1	1	
Binalbagan	37	17	
Cadiz	93	55	
Cawayan	51	33	
Escalante	16	2	
Himamaylan	149	66	
Hinigaran	120	98	
Ilog	38	31	
Isabela	56	32	
Kabancalan	124	61	
La Carlota	68	41	
Lorcha "Ana Vasquez"	3	1	
Manapla	97	77	
Pontevedra	115	58	
Sagay	60	28	
San Cárlos	12	6	
Saravia	132	167	
Silay	70	41	
Talisay	67	44	
Valladolid	54	37	
Victorias	56	32	
Total	1,750	1,069	61.08
Nueva Ecija:	18	9	50.00
Aliaga			
Pampanga:			
Apalit	5	3	
Bacolor	38	33	
Guagua	26	23	
Lubao	19	19	
Macabebe	25	20	
Masantol	41	34	
Mexico	2	2	
Minalin	17	14	
San Fernando	21	17	
San Luis	1	1	
San Simon	1	1	
Santa Rita	6	6	
Sexmoan	32	29	
Total	234	202	86.32

Cholera in the provinces—Continued.

Provinces and towns.	Deaths.	Cases.	Mortality.
Pangasinan:			*Per ct.*
Lingayen	1	1	100.00
Rizal:			
Antipolo	2		
Binangonan	12	11	
Cainta	83	22	
Caloocan	10	5	
Cardona	26	16	
Jalajala	10	6	
Las Piñas	2		
McKinley	1	1	
Malabon	146	91	
Mariquina	13	11	
Montalban	1	1	
Morong	1	1	
Navotas	35	27	
Parañaque	43	16	
Pasay	109	31	
Pasig	46	29	
Pateros	12	10	
San Felipe Neri	1	1	
San Juan del Monte	4	1	
San Mateo	2	2	
San Pedro Makati	9	4	
Taguig	48	40	
Tanay	1		
Taytay	64	46	
Total	631	372	58.95
Romblon:			
Badajos	10	3	
Bantoon	1	1	
Cajidiocan	1	1	
Hinugusan	1	1	
Looc	48	26	
Romblón	112	66	
San Fernando	11	3	
Sibuyan	11	4	
Total	195	105	53.84
Samar:			
Catbalogan	10	8	
Catubig	70	55	
Gandara	35	22	
Guiwan	122	92	
Laoang	19	15	
Palapag	29	16	
Tarangnan	13	8	
Total	298	216	72.48
Sorsogon:			
Aroroy	14	10	
Bacon	24	12	
Bulan	2	2	
Casiguran	47	25	
Castilla	2	2	
Donsol	18	8	
Irosin	36	13	
Juban	22	19	
Sorsogón	13	5	
Total	178	96	53.93
Tayabas:			
Guinayangan	12	9	
Lucban	2	1	
Total	14	10	71.42
Zambales:			
Cabangan	45	17	
Castillejos	9	6	
San Antonio	2	1	
San Marcelino	7	3	
San Narciso	10	7	
Subic	41	28	
Total	114	62	54.38

Cholera in the provinces—Continued.

SUMMARY BY PROVINCES.

Provinces and towns.	Deaths.	Cases.	Mortality.
Provinces:			*Per ct.*
Albay	908	501	55.60
Ambos Camarines	1,260	791	62.77
Antique	45	38	84.44
Bataan	280	215	76.78
Batangas	117	84	76.78
Bohol	62	28	45.16
Bulacán	1,114	741	66.51
Cagayán	4	1	25.00
Capiz	182	104	57.14
Cavite	345	242	70.14
Cebu	15	9	60.00
Culión	3	2	66.66
Iloilo	2,170	1,395	64.28
Laguna	224	164	73.21
Leyte	322	238	73.91
Masbate	8	2	25.00
Mindanao	719	526	73.15
Mindoro	31	20	64.51
Misamis	391	230	58.82
Occidental Negros	1,750	1,069	61.08
Nueva Ecija	18	9	50.00
Pampanga	234	202	86.32
Pangasinan	1	1	100.00
Rizal	631	372	58.95
Romblón	195	105	53.84
Samar	298	216	72.48
Sorsogón	178	96	53.93
Tayabas	14	10	71.42
Zambales	114	62	54.38
Total	11,633	7,473	64.23

REPORTS RECEIVED OF BLIND PERSONS LIVING IN THE VARIOUS PROVINCES OF THE PHILIPPINE ISLANDS.

Provinces.	Race.	Number.		Children.		Single.		Married.		Widowed.		Total.
		Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
Abra	Filipino	31	24	----	----	11	5	16	9	4	10	55
Agusan	do	16	8	3	1	8	4	5	2	----	1	24
Albay	do	125	96	8	9	66	56	42	11	9	20	221
Ambos Camarines	do	32	38	----	1	27	21	5	7	----	9	70
Antique	do	65	52	4	7	26	16	21	10	14	19	117
Bataan	do	35	19	1	3	14	10	13	1	7	5	54
Batanes	do	15	32	----	1	2	9	8	6	5	16	47
Batangas	do	80	60	6	2	33	30	30	18	11	10	140
Bohol	do	147	113	10	3	78	75	45	18	14	17	260
Bulacan	do	49	44	----	6	28	21	12	5	9	12	93
Cagayan	do	71	51	7	3	26	20	32	9	6	19	122
Capiz	do	88	88	1	2	34	28	37	21	16	37	176
Cavite	do	67	64	12	6	27	27	22	15	6	16	131
Cebu	do	77	69	3	19	44	27	21	8	9	15	146
Ilocos Norte	do	50	55	1	2	18	24	25	13	6	16	105
Ilocos Sur	do	77	73	9	6	35	26	24	18	9	23	150
Iloilo	do	109	92	7	2	47	41	38	16	17	33	201
Isabela	do	3	7	----	----	------	1	2	2	1	4	10
Laguna	do	62	38	10	4	28	14	19	8	5	12	100
Leyte	do	167	86	17	5	87	49	45	13	18	19	253
Mindoro	do	6	3	----	----	2	----	4	3	----	----	9
Misamis	do	81	49	6	6	40	14	25	16	10	13	130
Nueva Ecija	do	52	38	6	2	17	11	20	6	9	19	90
Nueva Vizcaya	do	12	6	----	----	5	----	2	6	5	----	18
Occidental Negros	do	91	60	6	2	53	37	17	9	15	12	151
Oriental Negros	do	81	50	5	1	47	26	20	9	9	14	131
Palawan	do	12	10	1	2	5	3	3	3	3	2	22
Pampanga	do	185	98	13	7	73	47	72	21	27	23	283
Pangasinan	do	167	145	26	24	65	45	59	43	17	33	312
Rizal	do	78	58	3	3	25	25	37	14	13	16	136
Romblon	do	36	21	3	1	12	17	17	2	4	1	57
Samar	do	127	81	13	8	70	46	30	18	14	9	208
Sorsogon	do	102	45	15	8	58	26	23	6	6	5	147
Surigao	do	25	2	2	----	9	2	11	----	3	----	27
Tarlac	do	52	40	10	5	11	11	22	10	9	14	92
Tayabas	do	84	45	12	9	42	19	23	8	7	9	129
Union	do	39	30	5	2	13	11	14	6	7	11	69
Zambales	do	29	27	2	4	10	8	13	5	4	10	56
Total		2,625	1,917	227	166	1,196	852	874	395	328	504	4,542

REPORTS RECEIVED OF INSANE PERSONS LIVING IN THE VARIOUS PROVINCES OF THE PHILIPPINE ISLANDS AND IN HOSPITALS.

Provinces and hospitals.	Race.	Number.		Children.		Single.		Married.		Widowed.		Total.
		Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
Abra	Filipino	38	28	2	1	22	14	11	7	3	6	66
Agusan	do	12	8	----	----	8	7	2	----	2	1	20
Albay	do	50	44	3	----	39	29	4	9	4	6	94
Ambos Camarines	do	49	39	7	5	19	19	14	3	9	12	88
Antique	do	61	32	----	1	44	14	15	11	2	6	93
Bataan	do	16	11	----	----	9	3	5	5	2	3	27
Batanes	do	12	11	----	----	10	8	2	1	----	2	23
Batangas	do	55	39	----	----	38	24	13	8	4	7	94
Bohol	do	260	189	9	2	202	145	40	33	9	9	449
Bulacan	do	34	31	----	1	25	12	6	10	3	8	65
Cagayan	do	32	24	2	----	17	11	8	11	5	2	56
Capiz	do	59	69	----	----	34	29	19	22	6	18	128
Cavite	do	46	43	1	----	29	17	11	17	5	9	89
Cebu	do	211	132	1	----	176	107	28	19	6	6	343
Hospicio de San Jose	(a)	9	191	----	----	----	----	----	----	----	----	200
Cavite Sanatorium	(b)	215	----	----	----	----	----	----	----	----	----	215
Ilocos Norte	Filipino	60	33	----	2	40	20	18	8	2	3	93
Ilocos Sur	do	104	50	1	----	67	29	27	11	9	10	154
Iloilo	do	78	68	----	----	53	41	19	16	6	11	146
Isabela	do	----	2	----	----	----	1	----	----	----	1	2
Laguna	do	37	35	----	----	20	14	13	10	4	11	72
Leyte	do	110	54	3	----	82	31	21	13	4	10	164
Mindoro	do	5	5	----	----	2	4	3	1	----	----	10
Misamis	do	87	49	4	----	63	30	16	7	4	12	136
Nueva Ecija	do	29	23	----	----	24	12	4	8	1	3	52
Nueva Vizcaya	do	12	5	----	----	7	2	5	2	----	1	17
Occidental Negros	do	51	30	1	----	32	12	8	10	10	8	81
Oriental Negros	do	110	49	----	----	87	36	14	8	9	5	159
Palawan	do	14	11	----	----	11	6	1	3	2	2	25
Pampanga	do	27	27	1	----	15	13	8	8	3	6	54
Pangasinan	do	165	114	5	7	77	41	60	42	23	24	279
Rizal	do	32	25	----	----	21	13	7	10	4	2	57
Romblon	do	13	15	----	----	7	6	5	7	1	2	28
Samar	do	77	33	45	19	21	12	10	1	1	1	110
San Lazaro Hospital	(c)	296	67	1	1	144	29	133	23	18	14	363
Sorsogon	Filipino	36	24	----	----	25	12	11	7	----	5	60
Surigao	do	10	3	6	----	----	----	2	3	2	----	13
Tarlac	do	7	6	----	----	3	5	4	----	----	1	13
Tayabas	do	125	102	5	8	98	69	14	20	8	5	227
Union	do	38	27	----	----	17	18	17	7	4	2	65
Zambales	do	19	17	1	----	13	9	5	7	----	1	36
Total		2,701	1,765	98	47	1,601	904	603	388	175	235	4,466

[a] Spaniards, 2; Filipinos, 198; total, 200.

[b] Europeans, 1; Filipinos, 203; Spaniards, 4; Chinese, 6; others, 1; total, 215.

[c] Americans, 7; Filipinos, 340; Europeans, 9; Chinese, 5; others, 2; total, 363.

REPORT OF HOSPICIO DE SAN JOSE, INSANE DEPARTMENT.

In hospicio January 1, 1916	424
Admitted	163
Discharged	120
Died	52
Remaining in the hospicio at end of the year	415

REPORT OF SERA.

	Antidiphtheritic.	Antigonococcus.	Antimeningococcic.	Antitetanic.	Antityphoid.	Staphylococcus.	Tuberculine.	Typhoid.
	Units.	*Units.*	*c. c.*	*Units.*	*Amp.*	*Tubes.*	*Tubes.*	*Tubes.*
On hand at the beginning of year	393,500							
Received from the Bureau of Science	3,200,000	22	90	940,000	140	12	32	2
Turned from Baguio Hospital	99,000							
Total to be accounted for	3,692,500	22	90	940,000	140	12	32	2
Issued	2,847,500	22	90	940,000	140	12	32	2
Remaining at end of year	845,000							

AMOUNT OF VACCINE VIRUS DISTRIBUTED BY THE PHILIPPINE HEALTH SERVICE.

	Units.
Amount on hand January 1, 1916	21,950
Received from the Bureau of Science	1,373,700
Total to be accounted for	1,395,650
Distributed as per itemized statement	1,392,300
Remaining on hand December 31, 1916	3,350

PLACES AT WHICH VACCINE VIRUS WAS DISTRIBUTED.

	Units.
Provinces:	
Albay	81,500
Ambos Camarines	40,900
Baguio Hospital	5,000
Bataan	5,850
Batanes	1,500
Batangas	40,000
Benguet	100
Bohol	2,000
Bulacan	29,900
Cagayan	18,950
Capiz	14,500
Cavite	17,100
Cebu	340,000
Culion Leper Colony	8,750
Ilocos Norte	54,800
Ilocos Sur	29,300
Iloilo	80,000
Isabela	10,500
Laguna	31,950
Leyte	62,000
Masbate	1,000
Mindoro	13,500
Nueva Ecija	33,400
Nueva Vizcaya	7,300
Palawan	4,500
Pampanga	48,950
Pangasinan	131,000
Rizal	21,000
Romblon	7,000
Samar	36,100
Sorsogon	22,200
Tarlac	15,400
Tayabas	30,050
Union	55,550
Zambales	10,400
Total	1,311,950
Manila:	
Health districts	70,500
Other institutions	9,850
Total	80,350
Grand total	1,392,300

VACCINATION, CALENDAR YEAR 1916.

[Closed January 16, 1917.]

	Vaccinations.	Inspections.	Positive.	Negative.
City of Manila.				
Health districts:				
No. 1, Intramuros	4,546	2,633	1,392	1,241
No. 2, Meisic	14,432			
No. 4, Sampaloc	8,755	4,349	1,682	2,667
No. 5, Tondo	11,953	5,256	2,469	2,787
No. 6, Paco	16,287	741	325	416
Total	55,973	12,979	5,868	7,111
Provinces.				
Agusan	7,459	2,887	1,080	1,807
Albay	60,046	43,276	32,454	10,822
Ambos Camarines	32,368	24,636	16,140	8,496
Batanes	557	404	46	358
Batangas	12,822	11,104	6,219	4,885
Bohol	86,826	76,708	36,721	39,987
Cagayan	15,395	11,152	4,781	6,371
Capiz	3,713	2,903	1,849	1,054
Cebu	94,956	44,901	34,064	10,837
Laguna	29,913	27,482	18,857	8,625
Leyte	47,666	12,408	6,304	6,104
Misamis	24,010	18,900	10,332	8,568
Nueva Vizcaya	5,643	5,501	3,357	2,144
Occidental Negros	10,792	9,310	6,078	3,232
Oriental Negros	28,452	24,441	15,057	9,384
Palawan	262	220	129	91
Pampanga	38,463	34,916	23,374	11,542
Pangasinan	113,748	100,694	69,423	31,271
Samar	1,798			
Tarlac	9,534	7,192	5,170	2,022
Tayabas	28,223	20,310	15,388	4,922
Union	36,128	30,940	16,164	14,776
Sorsogon	7,644	3,201	2,002	1,199
Bukidnon	3,310	1,152	860	292
Total	699,728	514,638	325,849	188,789
Grand total	755,701	527,617	331,717	195,900

MORTALITY AMONG GOVERNMENT EMPLOYEES.

[Closed February 10, 1917.]

	Americans.	Filipinos.
Average number of employees	1,789	8,464
Deaths reported:		
From illness	6	39
From violence	1	1
Total	7	40
Deaths from illness:		
Average years of service	3.99	9.01
Average age at death	39.26	29.70
Annual death rate per thousand	3.35	4.60
Deaths from violence:		
Average years of service	7.14	1.34
Average age at death	30.00	22.70
Annual death rate per thousand	0.55	0.11
Total deaths:		
Average years of service	3.63	8.90
Average age at death	36.86	29.56
Annual death rate per thousand	3.91	4.72

Both nationalities:	
Population	10,253
Number of deaths	47
Average years of service	7.84
Average age at death	31.12
Annual death rate per thousand	4.58

All deceased are males, excepting one Filipino female.

BAGUIO HOSPITAL.

HOSPITAL CASES.

Diseases.	Remaining at last report.	Admitted.	Died.	Transferred.	Discharged.	Remaining.
1. Typhoid fever		14			11	3
4. Malaria	2	123			124	1
6. Measles		3			3	
9. Diphtheria and croup		1	1			
10. Influenza		14			14	
14. Dysentery	3	36	6		33	
19. Other epidemic diseases		11			10	1
20. Purulent infection and septichæmia		4	1		3	
24. Tetanus		1			1	
25. Mycoses		1			1	
28. Tuberculosis of the lungs	2	18	4		11	5
31. Abdominal tuberculosis		2			2	
32. Pott's disease		2	1		1	
34. Tuberculosis of other organs		1			1	
35. Disseminated tuberculosis		1	1			
37a. Syphilis, primary		3			3	
37b. Syphilis, secondary		4			4	
38b. Gonococcus infection		7			7	
45. Cancer and other malignant tumors of other organs or of organs not specified		1			1	
46. Other tumors (tumors of the female genital organs excepted)		4			4	
47. Acute articular rheumatism	1	10			11	
50. Diabetes		1	1			
51. Exophthalmic goitre		1			1	
54. Anæmia, chlorosis		1			1	
55. Other general diseases		2			2	
56. Alcoholism (acute or chronic)	1	4			5	
73b. Neuralgia and neurities		2			2	
74. Other diseases of the nervous system		4			4	
75b. Trachoma		1			1	
75c. Other diseases of the eyes and their annexa		11			10	1
79. Organic diseases of the heart		6	1		4	1
83. Diseases of the veins (varices, hæmorrhoids, phlebitis, etc.)		5			5	
84. Diseases of the lymphatic system (lymphangitis, etc.)		4			4	
85. Hæmorrhage; other diseases of the circulatory system		1			1	
86. Diseases of the nasal fossæ		3			3	
87. Diseases of the larynx		6			6	
88. Diseases of the thyreoid body		2			2	
89. Acute bronchitis		18			18	
90. Chronic bronchitis		3			3	
91. Bronchopneumonia		11	1		10	
92. Pneumonia		4	3		1	
93. Pleurisy		3			3	
96. Asthma		2			1	1
98. Other diseases of the respiratory system (tuberculosis excepted)		2			2	
99a. Diseases of the teeth and gums		1			1	
99b. Other diseases of the mouth and annexa	1	2			3	
100. Diseases of the pharynx		9			8	1
102. Ulcer of the stomach		1	1			
103. Other diseases of the stomach (cancer excepted)	1	33			33	1
104. Diarrhœa and enteritis (under 2 years)		4	1		3	
105. Diarrhœa and enteritis (2 years and over)		11	1		10	
107. Intestinal parasites	3	20	1		22	
108. Appendicitis and tiphlitis		5			5	
110a. Diseases of the anus and fæcal fistulas		1			1	
110b. Other diseases of the intestines		7			7	
114. Biliary calculi		3			3	
115. Other diseases of the liver		1				1
117. Simple peritonitis (nonpuerperal)		2	1		1	
119. Acute nepritis		5	1		4	
120. Bright's disease		5	2		3	
124. Diseases of the bladder		2			2	
127. Nonvenereal diseases of the male genital organs		2			2	
130a. Metritis		1			1	
130b. Other diseases of the uterus		2			2	
132. Salphingitis and other diseases of the female genetal organs		3			3	
133. Nonpuerperal diseases of the breast		1			1	
134a. Normal labor	2	50			51	1

Baguio Hospital—Continued.

HOSPITAL CASES—Continued.

Diseases.	Remaining at last report.	Admitted.	Died.	Transfered.	Discharged.	Remaining.
134b. Accidents of pregnancy		9			9	
135. Puerperal hæmorrhage		1			1	
136. Other accidents of labor		8			8	
137. Puerperal septichæmia		5			5	
138. Puerperal albuminuria and convulsions		1				1
141. Puerperal diseases of the breast		2			2	
143. Furuncle		5			5	
144. Acute abscess	1	18			19	
145a. Trichophytosis (tineas and peladas)		2			2	
145b. Scabies		10			10	
145c. Other diseases of the skin and annexa		7			7	
147. Diseases of the joints (tuberculosis and rheumatism excepted)		4			3	1
149. Other diseases of the organs of locomotion		2			2	
150. Congenital malformations (stillbirths not included)		5			5	
151a. Nurslings discharged from hospital without disease	2	54			55	1
151b. Congenital debility, icterus and sclerema		3	2		1	
153. Lack of care	1				1	
154. Senility		1	1			
167. Burns (conflagration excepted)		3			2	1
171. Traumatism by cutting or piercing instruments		18			17	1
172. Traumatism by fall		11			11	
173. Traumatism in mines and quarries	1	1			2	
174. Traumatism by machines	3	2			5	
175. Traumatism by other crushing (vehicles, railways, landslides, etc.)		21	1		19	1
176. Injuries by animals	1	4			4	1
182. Homicide by firearms		1				1
183. Homicide by cutting or piercing instruments		1	1			
185a. Dislocations		3			3	
185b. Sprains		2			2	
185c. Fractures (cause not specified)		10	1		9	
186. Other external violence	1	4			5	
189a. Cause of death not specified or ill-defined		5	1		4	
189b. No disease, feigned disease	1	4			5	
Total	27	756	35	0	723	25

Patients treated in the outdoor department at the Baguio Hospital	4,615

LABORATORY EXAMINATIONS.

Specimen.	Americans.	Europeans.	Filipinos.	Chinese.	Others.	Total.
Blood	29	10	49	1	7	96
Fæces	88	28	174	0	16	306
Pus	11	3	4	0	91	109
Sputum	12	6	21	3	1	43
Urine	123	19	79	0	4	225
Miscellaneous						
Total	263	66	327	4	119	779

SUMMARY AND MISCELLANEOUS.

New cases admitted to hospital	694
Patients' visits to hospital clinic	8,994
Patients who attended hospital clinic	4,743
Prescriptions filled	6,427
Major operations	25
Minor operations	364
Surgical dressings, hospital clinic	2,367
Chauffeurs examined	23
Civil-service employee examined	1
Constabulary recruits examined	8

BONTOC HOSPITAL.

HOSPITAL CASES.

Diseases.	Remaining at last report.	Admitted.	Discharged.	Died.	Remaining.
1. Typhoid fever	1	9	7	3	
4. Malaria	2	83	77	2	6
6. Measles		1	1		
10. Influenza		23	16		7
14. Dysentery	3	33	34	1	1
19. Other epidemic diseases		65	65		
20. Purulent infection and septichæmia		18	15	1	2
25. Mycoses	1	2	2		1
27. Beriberi		7	6	1	
28. Tuberculosis of the lungs		13	10	3	
32. Pott's disease		1	1		
34. Tuberculosis of other organs		4	3		1
37c. Syphilis, tertiary		1	1		
38b. Gonococcus infection		3	2		1
46. Other tumors (tumors of the female genital organs excepted)		1	1		
47. Acute articular rheumatism		2	2		
48. Chronic rheumatism and gout		6	6		
69. Epilepsy		1	1		
73a. Hysteria		1	1		
74. Other diseases of the nervous system		1	1		
75a. Follicular conjunctivitis		6	4		2
75c. Other diseases of the eyes and their annexa	1	7	8		
78. Acute endocarditis		1		1	
79. Organic diseases of the heart		2	2		
83. Diseases of the veins (varices, hæmorrhoids, phlebitis, etc.)		1	1		
85. Hæmorrhage; other diseases of the circulatory system		1		1	
87. Diseases of the larynx	1	1	2		
89. Acute bronchitis	1	23	22		2
91. Bronchopneumonia		2	1	1	
92. Pneumonia		1	1		
95. Gangrene of the lungs		1		1	
98. Other diseases of the respiratory system (tuberculosis excepted)		2	2		
99a. Diseases of the teeth and gums		2	2		
99b. Other diseases of the mouth and annexa		6	6		
100. Diseases of the pharynx		7	6		1
101. Diseases of the œsophagus		1	1		
103. Other diseases of the stomach (cancer excepted)		34	32		2
105. Diarrhœa and enteritis (2 years and over)		9	9		
107. Intestinal parasites		7	7		
108. Appendicitis and typhlitis		1	1		
110a. Diseases of the anus and fæcal fistulas		1			1
113. Cirrhosis of the liver		1	1		
119. Acute nephritis		9	9		
120. Bright's disease		2		1	1
124. Diseases of the bladder		1	1		
126. Diseases of the prostate		1	1		
127. Nonvenereal diseases of the male genital organs		1	1		
130. Other diseases of the uterus		6	6		
132. Salpingitis and other diseases of the female genital organs		1	1		
134b. Accidents of pregnancy		3	3		
136. Other accidents of labor		2	2		
140. Following childbirths (not otherwise defined)	1	29	30		
143. Furuncle		7	6		1
144. Acute abcess		11	10		1
145a. Trichophytosis (tineas and peladas)		21	12		9
145b. Scabies		3	3		
145c. Other diseases of the skin and annexa	2	23	25		
146. Diseases of the bones (tuberculosis excepted)		2	1		1
149. Other diseases of the organs of locomotion		1	1		
151b. Congenital debility, icterus, and sclerema	1	3	4		
154. Senility	1	1	1	1	
164. Poisoning by food		1	1		
167. Burns (conflagration excepted)	1	5	5		1
171. Traumatism by cutting or piercing instruments		8	8		
174. Traumatism by machines		2	2		

Bontoc Hospital—Continued.

HOSPITAL CASES—Continued.

Diseases.	Remaining at last report.	Admitted.	Died.	Dischaaged.	Remaining.
176. Injuries by animals		3	2		1
177b. Starvation		1	1		
185c. Fractures (cause not specified)		4	3		1
186. Other external violence		10	9		1
189a. Cause of death not specified or ill-defined	1	10	11		
Total	17	563	519	17	44

Patients treated in the outdoor department at the Bontoc Hospital	9,283
Cases treated in the outdoor department at the Bontoc Hospital	3,038
Cases treated in the provincial health stations by medical officers or assistant sanitary inspector, Mountain Province	11,226

LABORATORY EXAMINATIONS.

Specimen.	Americans.	Europeans.	Filipinos.	Igorots.	Total.
Blood	2		58	130	190
Fæces			71	164	235
Pus	8		10	12	30
Sputum	1		57	53	111
Urine	11		52	74	137
Total	22		248	433	703

MISCELLANEOUS.

Patients admitted	563
Patients remaining January 1, 1916	17
Hospital days	11,934
Hospital days per patient	20.57
Deaths	17

BUTUAN HOSPITAL.

HOSPITAL CASES.

Diseases.	Remaining at last report.	Admitted.	Died.	Discharged.	Remaining.
1. Typhoid fever		1		1	
4. Malaria	4	116	2	111	7
10. Infiuenza		10		10	
14. Dysentery		2		2	
19. Other epidemic diseases	1	4		5	
27. Beriberi		16		15	1
28. Tuberculosis of the lungs		9	1	8	
37. Syphilis	1	1		2	
38b. Gonococcus infection		4		4	
45. Cancer and other malignant tumors of other organs or of organs not specified		1		1	

Butuan Hospital—Continued.

HOSPITAL CASES—Continued.

Diseases.	Remaining at last report.	Admitted.	Discharged.	Died.	Remaining.
46. Other tumors (tumors of the female genital organs excepted)		2		2	
47. Acute articular rheumatism		2		2	
59. Other chronic poisonings		1		1	
68. Other forms of mental alienation		1			1
73b. Neuralgia and neuritis		1		1	
75c. Other diseases of the eyes and their annexa		2		2	
79. Organic diseases of the heart		1		1	
84. Diseases of the lymphatic system (lymphangitis, etc.)		1		1	
86. Diseases of the nasal fossae		3		3	
89. Acute bronchitis		2		2	
90. Chronic bronchitis		1		1	
99b. Other diseases of the mouth and annexa		1		1	
100. Diseases of the pharynx		1		1	
103. Other diseases of the stomach		5		5	
105. Diarrhœa and enteritis (2 years and over)		3		3	
106. Ankylostomiasis	1	9		10	
107. Intestinal parasites		9		9	
108. Appendicitis and typhlitis		3		3	
109. Hernia, intestinal obstruction		1	1		
110a. Diseases of the anus and fæcal fistulas	1				1
110b. Other diseases ef the intestines		1		1	
115. Other diseases of the liver		4		4	
120. Bright's disease		2		2	
124. Diseases of the bladder		2		2	
127. Nonvenereal diseases of the male genital organs		6		6	
130a. Metritis		1		1	
131. Cysts and other tumors of the ovary		1		1	
134b. Accidents of pregnancy		3		3	
135. Puerperal hæmorrhage		2		2	
137. Puerperal septichæmia		1	1		
143. Furuncle		1		1	
144. Acute abscess		6		6	
145b. Scabies		1		1	
145c. Other diseases of the skin and annexa		8		8	
150. Congenital malformations (stillbirths not included)		1		1	
171. Traumatism by cutting or piercing instruments	1	12		12	1
185a. Dislocations		1		1	
185c. Fractures (cause not specified)		2		2	
186. Other external violence		3		3	
187. Ill-defined organic disease		1		1	
Total	9	272	5	265	11

Patients treated in the outdoor department at the Butuan Hospital	5,865

CHINESE HOSPITAL SICK REPORT.

[Dr. Tee Han Kee, physician in charged.]

Status.	Number.		
	Male.	Female.	Total.
In hospital at last year	43		43
Received	466		466
Discharged	376		376
Died	99		99
Remaining at end of year	34		34

CULION LEPER COLONY.

Status.	Nationality.										
	Americans.		Europeans.		Filipinos.		Chinese.		Others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
Remaining at last year	1	--	4	--	2,340	1,320	1	--	9	5	3,680
Admitted	2	--	--	--	666	297	1	--	--	--	966
Readmitted	--	--	--	--	20	2	--	--	--	--	22
Born	--	--	--	--	32	33	--	--	--	--	65
Died	--	--	--	--	306	134	--	--	--	1	441
Discharged	--	--	--	--	2	5	--	--	--	--	7
Escaped	--	--	--	--	19	1	--	--	--	--	20
Remaining	3	--	4	--	2,731	1,512	2	--	9	4	4,265

PRISON SANITATION.

BILIBID PRISON REPORT OF SICK.

Diseases.	Remaining at last report.	Admitted.	Died.	Transferred.	Discharged.	Remaining.
1. Typhoid fever	--	1	--	--	1	--
4. Malaria	3	93	--	--	93	3
5. Smallpox	--	1	--	1	--	--
Cholera carrier	--	755	--	60	591	104
14. Dysentery	5	264	--	--	259	10
17. Leprosy	--	2	--	2	--	--
19. Other epidemic diseases	1	45	--	3	43	--
20. Purulent infection and septichæmia	--	4	--	--	3	1
24. Tetanus	--	1	--	1	--	--
27. Beriberi	2	2	--	--	4	--
28. Tuberculosis of the lungs	78	107	33	33	46	73
31. Abdominal tuberculosis	--	7	3	--	2	2
34. Tuberculosis of other organs	3	8	--	--	9	2
37a. Syphilis, primary	--	5	--	--	4	1
37b. Syphilis, secondary	--	6	--	--	6	--
37c. Syphilis, tertiary	1	7	--	--	7	1
38b. Gonococcus infection	3	79	--	--	82	--
46. Other tumors (tumors of the female genital organs excepted)	--	15	--	--	14	1
47. Acute articular rheumatism	--	1	--	--	1	--
48. Chronic rheumatism and gout	2	20	--	--	13	9
54. Anæmia, chlorosis	--	6	1	--	4	1
59. Other chronic poisonings	11	405	--	--	412	4
61. Simple meningitis	--	3	2	1	--	--
62. Locomotor ataxia	--	1	--	--	1	--
64. Cerebral hæmorrhage, apoplexy	--	2	2	--	--	--
66. Paralysis without specified cause	2	1	--	--	3	--
68. Other forms of mental alienation	--	14	--	9	5	--
69. Epilepsy	--	7	--	--	6	1
73a. Hysteria	--	1	--	--	1	--
73b. Neuralgia and neuritis	--	6	--	--	6	--
75c. Other diseases of the eyes and their annexa	2	56	--	1	56	1
76. Diseases of the ears	--	2	--	--	2	--
79. Organic diseases of the heart	1	2	1	--	2	--
81. Diseases of the arteries, atheroma, aneurysm, etc	--	2	1	--	1	--
83. Diseases of the veins (varices, hæmorrhoids, phlebitis, etc.)	1	39	--	--	39	1
84. Diseases of the lymphatic system (lymphangitis, etc.)	--	2	--	--	2	--
86. Diseases of the nasal fossæ	--	7	--	--	7	--
88. Diseases of the thyreoid body	--	2	--	--	2	--
89. Acute bronchitis	--	8	--	--	8	--

Prison Sanitation—Continued.

BILIBID PRISON REPORT OF SICK—Continued.

Diseases.	Remaining at last report.	Admitted.	Died.	Transferred.	Discharged.	Remaining.
92. Pneumonia	1	34	3		32	
93. Pleurisy		5	2		3	
95. Gangrene of the lungs		1			1	
96. Asthma	10	51			53	8
99a. Diseases of the teeth and gums	1	20			21	
99b. Other diseases of the mouth and annexa		2			2	
100. Diseases of the pharynx		3			3	
102. Ulcer of the stomach	2	4	2		4	
106. Ankylostomiasis	5	730			713	22
107. Intestinal parasites	18	1,065			1,068	15
108. Appendicitis and typhlitis		7	2	1	4	
109. Hernia, intestinal obstruction	2	35			36	1
110a. Diseases of the anus and fæcal fistulas	2	16			18	
110b. Other diseases of the intestines		20			20	
115. Other diseases of the liver		1			1	
116. Diseases of the spleen		1			1	
118. Other diseases of the digestive system (cancer and tuberculosis excepted)		1	1			
119. Acute nephritis		2	1		1	
120. Bright's disease	6	16	5		17	
122. Other diseases of the kidneys and annexa		1	1			
123. Calculi of the urinary passages		1			1	
124. Diseases of the bladder		2			2	
125. Diseases of the urethra, urinary abscess, etc		2			2	
127. Nonvenereal diseases of the male genital organs	3	52		1	53	1
129. Uterine tumor (noncancerous)	1				1	
132. Salpingitis and other diseases of the female genital organs		1			1	
141. Puerperal diseases of the breast		1			1	
142. Gangrene		1				1
143. Furuncle		4			4	
144. Acute abscess	1	7			7	1
145a. Trichophytosis (tineas and peladas)	8	71			68	11
145b. Scabies		7			7	
145c. Other diseases of the skin and annexa	1	16			17	
146. Diseases of the bones (tuberculcsis excepted)		5			4	1
147. Diseases of the joints (tuberculosis and rheumatism excepted)	1	2			2	1
149. Other diseases of the organs of locomotion		3			3	
150. Congenital malformations (stillbirths not included)	1	8			9	
154. Senility	1	2			3	
170. Traumatism by firearms		1			1	
171. Traumatism by cutting or piercing instruments		11			11	
182. Homicide by firearms		1	1			
185a. Dislocations		3			2	1
185b. Sprains		1			1	
185c. Fractures (cause not specified)	1	15			13	3
186. Other external violence		4			4	
187. Illdefined organic disease		2			2	
189a. Cause of death not specified or illdefined	19	316	1	4	313	17
Total	199	4,543	62	117	4,265	298

BILIBID PRISON LABORATORY EXAMINATIONS.

Specimen.	Number.
Blood	4,404
Faeces	12,272
Sputum	5,086
Urine	5,504
Miscellaneous	2,278
Total	29,544
Blood specimen taken for Vasserman reaction	409

SUMMARY AND MISCELLANEOUS.

Patients attended in the dressing room	12,428
Major operations performed	40
Minor operations performed	326
Prescriptions filled	9,302
Vaccinations made	8,843
Autopsies held	30

Prison Sanitation—Continued.

BILIBID PRISON REPORT OF DEATHS.

Diseases.	Presidio.				Carcel.				Total.	Conditions.			
	Filipinos.		Chinese.		Filipinos.		Chinese.						
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.		Married.	Single.	Widowed.	Unknown.
24. Tetanus							1		1	1			
28. Tuberculosis of the lungs	24	1	2		3	1	4		35	14	12	7	2
31. Abdominal tuberculosis	3								3	1		2	
37. Syphilis							1		1				1
61. Simple meningitis	3				1				4	3	1		
64. Cerebral hæmorrhage, apoplexy	1								1	1			
68. Other forms of mental alienation	2								2		1	1	
79. Organic diseases of the heart					1				1	1			
92. Pneumonia	3	1							4	4			
93. Pleurisy					1				1		1		
102. Ulcer of the stomach							2		2				2
108. Appendicitis and typhlitis	1				1				2		1		1
113. Cirrhosis of the liver	1								1			1	
115. Other diseases of the liver	1								1	1			
119. Acute nephritis	1								1	1			
120. Bright's disease	5						1		6	3		2	1
122. Other diseases of the kidneys and annexa	1								1	1			
170. Traumatism by firearms	1								1	1			
186. Other external violence	1				11				12	12			
Total	48	2	2		18	1	9		80	44	16	13	7

Died in Bilibid Hospital	63
Legally executed	12
Died in San Lazaro Hospital	5
Total	80

REPORT OF SICK AND INJURED PRISONERS AT STOCKADE HOSPITAL, CORREGIDOR.

Diseases.	Remaining at last report.	Admitted.	Died.	Transfered.	Discharged.	Remaining.
4. Malaria		2			2	
9. Diphtheria and croup		1		1		
10. Influenza		17			15	2
Cholera vibrio carriers		3		3		
14. Dysentery		22			22	
17. Leprosy		1		1		
19. Other epidemic diseases		44		17	27	
20. Purulent infection and septichæmia		2			2	
28. Tuberculosis of the lungs		50		50		
34. Tuberculosis of other organs		2		1	1	
37a. Syphilis, primary		1			1	
37b. Syphilis, secondary		6			6	
88b. Gonococcus infection		8			8	
46. Other tumors (tumors of the female genital organs excepted)		3			3	
47. Acute articular rheumatism		4			3	1
48. Chronic rheumatism and gout		2		2		
54. Anæmia, chlorosis		1		1		
66. Paralysis without specified cause		1			1	
68. Other forms of mental alienation		7		4	8	
69. Epilepsy		3		2	1	
73b. Neuralgia and neuritis		2			2	
75a. Follicular conjunctivitis		14			14	
75b. Trachoma		4			4	
75c. Other diseases of the eyes and their annexa		333		2	328	3
76. Diseases of the ears		2	1		1	
79. Organic diseases of the heart		4		4		
83. Diseases of the veins (varices, hæmorrhoids, phlebitis, etc.)		4			4	

Prison Sanitation—Continued.

REPORT OF SICK AND INJURED PRISONERS AT STOCKADE HOSPITAL, CORREGIDOR—Continued.

Diseases.	Remaining at last report.	Admitted.	Died.	Transferred.	Djscharged.	Remaining.
84. Diseases of the lymphatic system (lymphangitis, etc.)	------	14	------	------	13	1
85. Hæmorrhage; other diseases of the circulatory system	------	1	------	------	1	------
89. Acute bronchitis	------	42	------	------	42	------
90. Chronic bronchitis	------	1	------	------	1	------
91. Bronchopneumonia	------	2	------	------	2	------
92. Pneumonia	1	63	6	------	56	2
93. Pleurisy	------	5	------	1	4	------
96. Asthma	------	6	------	2	4	------
98. Other diseases of the respiratory system (tuberculosis excepted)	------	1	------	------	1	------
99b. Other diseases of the mouth and annexa	------	9	------	------	9	------
100. Diseases of the pharynx	------	1	------	------	1	------
102. Ulcer of stomach	------	1	1	------	------	------
103. Other diseases of the stomach (cancer excepted)	------	1	------	------	1	------
105. Diarrhoea and enteritis (2 years and over)	------	29	------	------	29	------
106. Ankylostomiasis	1	95	1	3	92	------
107. Intestinal parasites	1	75	------	2	74	------
108. Appendicitis and typhlitis	------	4	------	1	3	------
109. Hernia, intestinal obstruction	------	4	------	------	4	------
110a. Diseases of the anus and fæcal fistulas	------	18	------	------	18	------
110b. Other diseases of the intestine	------	14	------	------	14	------
115. Other diseases of the liver	------	2	------	------	2	------
119. Acute nephritis	1	7	1	2	5	------
120. Bright's disease	------	1	------	------	1	------
122. Other diseases of the kidneys and annexa	1	------	------	------	1	------
123. Calculi of the urinary passages	------	1	------	------	1	------
124. Diseases of the bladder	------	2	------	------	2	------
127. Nonvenereal diseases of the male genital organs	------	4	------	------	4	------
143. Furuncle	------	17	------	------	17	------
144. Acute abscess	------	41	------	------	41	------
145b. Scabies	------	1	------	1	------	------
145c. Other diseases of the skin and annexa	------	10	------	------	10	------
146. Diseases of the bones (tuberculosis excepted)	------	2	------	------	2	------
147. Diseases of the joints (Tuberculosis and rheumatism excepted)	------	1	------	------	1	------
149. Other diseases of the organs of locomotion	------	10	------	------	10	------
150.(3) Other congenital malformations	------	1	------	------	1	------
154. Senility	------	2	------	1	1	------
167. Burns (conflagration excepted)	------	2	------	------	2	------
171. Traumatism by cutting or piercing instruments	------	18	------	------	18	------
179. Effects of heat	------	17	------	------	17	------
185b. Sprains	------	5	------	------	5	------
185c. Fractures (cause not specified)	1	4	------	------	5	------
186. Other external violence	1	50	1	------	47	3
187. Ill-defined organic disease	------	6	------	------	6	------
Total	7	1,133	11	101	1,016	12

IWAHIG PENAL COLONY REPORT OF SICK.

Diseases.	Remaining at last year.	Admitted.	Died.	Discharged.	Remaining.
1. Typhoid fever	1	------	------	1	------
4. Malaria	25	1,211	1	1,207	28
4a. Malaria cachexia	------	3	------	3	------
6. Measles	------	1	------	1	------
10. Influenza	3	25	------	28	------
14. Dysentery	1	12	------	13	------
18. Erysipelas	------	4	------	4	------
19. Other epidemic diseases	------	2	------	2	------
20. Purulent infection and septichæmia	2	3	------	5	------
27. Beriberi	1	7	------	8	------
28. Tuberculosis of the lungs	12	124	7	120	9
31. Abdominal tuberculosis	------	1	------	1	------

Prison Sanitation—Continued.

IWAHIG PENAL COLONY REPORT OF SICK—Continued.

Diseases.	Remaining at last report.	Admitted.	Died.	Discharged.	Remaining.
38b. Gonococcus infection		3		3	
40. Cancer and other malignant tumors of the stomach, liver		1	1		
44. Cancer and other malignant tumors of the skin		1		1	
46. Other tumors (tumors of the female genital organs excepted)		3		3	
47. Acute articular rheumatism		29		28	1
48. Chronic rheumatism and gout		1		1	
54. Anæmia, chlorosis		1		1	
64. Cerebral hæmorrhage, apoplexy	1			1	
66. Paralysis without specified cause		2		2	
68. Other forms of mental alienation		1		1	
73b. Neuralgia and neuritis		19		19	
74. Other diseases of the nervous system		7		7	
75a. Follicular conjunctivitis		1		1	
75c. Other diseases of the eyes and their annexa		16		15	1
76. Diseases of the ears		1		1	
77. Pericarditis		1		1	
78. Acute endocarditis		1		1	
79. Organic diseases of the heart		1	1		
83. Diseases of the veins (varices, hæmorrhoids, phlebitis, etc.)		5		4	1
84. Diseases of the lymphatic system (lymphangitis, etc.)		7		6	1
85. Hæmorrhage other diseases of the circulatory system		1		1	
89. Acute bronchitis	1	6		7	
92. Pneumonia		2	1	1	
93. Pleurisy		1		1	
94. Pulmonary congestion, pulmonary apoplexy		18		17	1
96. Asthma		6		5	1
98. Other diseases of the respiratory system (tuberculosis excepted)	1	7		8	
99a. Diseases of the teeth and gums	1	10		11	
99b. Other diseases of the mouth and annexa		2		2	
100. Diseases of the pharynx		2		2	
102. Ulcer of the stomach		1		1	
103. Other diseases of the stomach (cancer excepted)		42		40	2
104. Diarrhœa and enteritis (under 2 years)		1		1	
105. Diarrhœa and enteritis (2 years and over)		26		26	
106. Ankylostomiasis		5		5	
107. Intestinal parasites		1		1	
108. Appendicitis and typhlitis		1		1	
109. Hernia intestinal obstruction		1	1		
110a. Diseases of the anus and fæcal fistulas	1	3		4	
110b. Other diseases of the intestines		14		14	
113. Cirrhosis of the liver		1			1
114. Biliary calculi		3		3	
115. Other diseases of the liver	1	8	1	8	
116. Diseases of the spleen		6		6	
120. Bright's disease		1	1		
123. Calculi of the urinary passages		1		1	
124. Diseases of the bladder		4		4	
127. Nonvenereal diseases of the male genital organs		2		2	
128. Uterine hæmorrhage (nonpuerperal)		1		1	
130b. Other diseases of the uterus		1			1
134a. Normal labor		2		2	
143. Furuncle	1	5		6	
144. Acute abscess		35		33	2
145a. Trichophytosis (tineas and peladas)		23		23	
145c. Other diseases of the skin and annexa	1	35		33	3
146. Diseases of the bones (tuberculosis excepted)	1	1		2	
147. Diseases of the joints (tuberculosis and rheumatism excepted)		11		10	1
148. Amputations		1		1	
149. Other diseases of the organs of locomotion		32		30	2
151b. Congenital debility, icterus, and sclerema		2		2	
164. Poisoning by food		1		1	
165a. Venomous bites and stings		6		6	
167. Burns (conflagration excepted)		8		8	
169. Accidental drowning		1	1		
171. Traumatism by cutting or piercing instruments	1	195		184	12
175. Traumatism by other crushing		1		1	
185a. Dislocations		2		2	
185b. Sprains		10		10	
185c. Fractures (cause not specified)		2		1	1
186. Other external violence		40		39	1
189a. Cause of death not specified or ill-defined	1	33		34	
Total	**56**	**2,118**	**15**	**2,090**	**69**

Prison Sanitation—Continued.

IWAHIG PENAL COLONY LABORATORY EXAMINATIONS.

Specimen.	Number.
Blood	466
Fæces	664
Sputum	30
Urine	49
Total	1,209

MISCELLANEOUS.

Surgical dressings, including suturing	8,146
Major operations performed	6
Minor operations performed	80

SAN LAZARO HOSPITAL.

INSANE DEPARTMENT.

Status.	Americans.		Europeans.		Filipinos.		Chinese.		Other.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
In hospital at last year	6	1	4	1	231	49	5		2		299
Admitted	31	3	15		112	31	63		4		259
Discharged	27	3	10		35	12	61		4		152
Transferred					3	1	2				6
Escaped					1						1
Died	3	1	1		30	1					36
Remaining	7		8	1	274	66	5		2		363

LEPER DEPARTMENT.

In hospital at last year					207	85					292
Admitted	2				194	100	3		1		300
Discharged					33	27	3		1		64
Transfered	2				236	96					334
Escaped					23	7					30
Died					6	4					10
Remaining					103	51					154

MORGUE AND CREMATORY DEPARTMENT.

Disposition.	Bodies.
Remaining from last year	1
Received:	
Asphyxiation	1
Bronchopneumonia	1
Cancer	2
Cerebral hæmorrhage	1
Cerebrospinal meningitis	1
Cholera	547
Possible	25
Probable	13
Diphtheria	40
Possible	3
Probable and lobar pneumonia	1
Drowned	1
Dysentery—	
Amoebic	1
Bacillary	4
Fracture of skull	1
Leprosy	10
Lobar pneumonia	1
Nephritis, chronic and syphilis	1
Paralysis	1
Peritonitis	1
Suppurative	1
Probably hydrophobia	1
Probable rabies	1
Pulmonary tuberculosis	64
Smallpox:	
Hæmorrhage	1
Possible	1

San Lazaro Hospital—Continued.

MORGUE AND CREMATORY DEPARTMENT—Continued.

Disposition.	Bodies.
Received—Continued.	
Stillborn	25
Tetanus	35
Possible	1
Other diseases	87
Total	874
Dropped:	
Buried by—	
Bureau of Prisons	5
Chinese cemetery	21
City	427
Family	350
Cremated	28
Turned over to—	
Army Morgue	1
Family	42
Total	874

Autopsies held, 372.

SOUTHERN ISLAND HOSPITAL.

HOSPITAL CASES.

Diseases.	Remaining at last report.	Admitted.	Died.	Transferred.	Escaped.	Discharged.	Remaining.
1. Typhoid fever	6	61	10			55	2
4. Malaria	1	17	2			15	1
4a. Malarial cachexia		1				1	
5. Smallpox		11			1	10	
6. Measles		7				6	1
8. Whooping cough		2	1			1	
9. Diphtheria and croup		2	1				1
12. Asiatic cholera		2				2	
14. Dysentery		24	5			19	
17. Leprosy		19		17		1	1
19. Other epidemic diseases		38				38	
20. Purulent infection and septichæmia		2	1			1	
24. Tetanus		2	2				
27. Beriberi		19	4			14	1
28. Tuberculosis of the lungs		8	2			6	
29. Acute miliary tuberculosis		5	5				
31. Abdominal tuberculosis		6	3			3	
34. Tuberculosis of other organs		4	1			3	
35. Disseminated tuberculosis		2				2	
37c. Syphilis, tertiary	1	5				6	
38b. Gonococcus infection	1	12				12	1
39. Cancer and other malignant tumors of the buccal cavity		1	1				
40. Cancer and other malignant tumors of the stomach, liver		1	1				
43. Cancer and other malignant tumors of the breast		2				2	
44. Cancer and other malignant tumors of the skin		2				1	1
45. Cancer and other malignant tumors of other organs or of organs not specified		10	1			9	
46. Other tumors (tumors of the female genital organs excepted)		19				19	
47. Acute articular rheumatism		8	1			6	1
48. Chronic rheumatism and gout		2				2	
51. Exophthalmic goitre		2				2	
53. Leuchæmia		1				1	
54. Anæmia, chlorosis		4	2			2	
55. Other general diseases		4				4	
56. Alcoholism (acute or chronic)		1				1	
61. Simple meningitis		1	1				
63. Other diseases of the spinal cord		1				1	
66. Paralysis without specified cause		1				1	
73b. Neuralgia and neuritis		2				2	
75a. Follicular conjunctivitis		1				1	
75b. Trachoma	1	4				5	
75c. Other diseases of the eyes and their annexa	2	35				36	1
76. Diseases of the ears		3				3	
81. Diseases of the arteries, atheroma, aneurysm, etc		2	1			1	

Southern Island Hospital—Continued.

HOSPITAL CASES—Continued.

Diseases.	Remaining at last report.	Admitted.	Died.	Transfered.	Escaped.	Discharged.	Remaining.
83. Diseases of the veins (varices, hæmorrhoids, phlebitis, etc.)		5				3	2
84. Diseases of the lymphatic system (lymphangitis, etc.)		8				8	
86. Diseases of the nasal fossæ		10				10	
87. Diseases of the larynx		2	2				
89. Acute bronchitis		10				10	
90. Chronic bronchitis		4	1			3	
91. Bronchopneumonia		4	1			3	
92. Pneumonia		4	1			3	
93. Pleurisy		4	1			3	
96. Asthma		1				1	
99a. Diseases of the teeth and gums		1				1	
99b. Other diseases of the mouth and annexa		3				3	
100. Diseases of the pharynx		42				42	
103. Other diseases of the stomach (cancer excepted)		16	1			15	
104. Diarrhœa and enteritis (under two years)		3	2			1	
105a. Due to alcoholism		1				1	
106. Ankylostomiasis	11	131	2			135	5
107. Intestinal parasites	10	332	2		1	329	10
108. Appendicitis and typhlitis	3	13	1			15	
109. Hernia, intestinal obstruction		13				10	3
110a. Diseases of the anus and fæcal fistulas		14	1			13	
110b. Other diseases of the intestines		11	1			10	
113. Cirrhosis of the liver		12	4			8	
115. Other diseases of the liver		1				1	
117. Simple peritonitis (nonpuerperal)		8	7			1	
119. Acute nephritis		4	1			3	
120. Bright's disease	1	13	2			12	
123. Calculi of the urinary passages		1				1	
124. Diseases of the bladder		16	3			13	
125. Diseases of the urethra, urinary abscess, etc		1				1	
127. Nonvenereal diseases of the male genital organs		16				16	
128. Uterine hæmorrhage (nonpuerperal)		2				2	
129. Uterine tumor (noncancerous)		2				2	
130a. Metritis		10	1			8	1
130b. Other diseases of the uterus		21	1			19	1
131. Cysts and other tumors of the ovary		12	3			8	1
132. Salpingitis and other diseases of the female genital organs		6	1			5	
134a. Normal labor		30				29	1
134b. Accidents of pregnancy		6				6	
136. Other accidents of labor		5	1			3	1
137. Puerperal septichæmia		2	2				
142. Gangrene		3	2				1
144. Acute abscess		50				49	1
145a. Trichophytosis (tineas and peladas)		2				2	
145b. Scabies		1				1	
145c. Other diseases of the skin and annexa	3	16				18	1
146. Diseases of the bones (tuberculosis excepted)		6				6	
147. Diseases of the joints (tuberculosis and rheumatism excepted)		4	1			3	
148. Amputations		1				1	
149. Other diseases of the organs of locomotion		1				1	
150. Congenital malformations (stillbirths not included)		3				3	
150(3) Other congenital malformations		3				3	
153. Lack of care	1	18	2			14	3
155. Suicide by poison		1				1	
167. Burns (conflagration excepted)		9				8	1
170. Traumatism by firearms		1	1				
171. Traumatism by cutting or piercing instruments	1	65	6			56	4
175. Traumatism by other crushing (vehicles, railways, landslides, etc.)		7				7	
176. Injuries by animals		5				5	
185a. Dislocations		2				2	
185b. Sprains		3				3	
185c. Fractures (cause not specified)		32	4		1	24	3
186. Other external violence		1				1	
189a. Cause of death not specified or ill-defined		12	6			6	
189b. No disease, feigned disease		69				67	2
Total	**42**	**1,471**	**109**	**17**	**3**	**1,332**	**52**

Patients treated in the outdoor department at the Southern Islands Hospital 9,345

LABORATORY EXAMINATIONS.

Specimen.	Nationality.					
	Americans.	Europeans.	Filipinos.	Chinese.	Others.	Total.
Blood	4	5	106	1	8	124
Fæces	28	10	815	2	12	867
Sputum	4		28			32
Urine	22	13	543	2	9	589
Miscellaneous			3		1	4
Total	58	28	1,495	5	30	1,616

SUMMARY AND MISCELLANEOUS.

	Number.	
	Hospital.	Outpatience.
Total number of patients admitted	841	7,265
Visit by outpatients		23,992
Patients:		
Charity	151	8,324
Government free	21	523
Government pay	13	
Private pay	27	10
Surgical dressings:		
Charity	3,439	13,711
Government free	210	880
Private pay		241
Major operations performed:		
Charity	95	
Government free	12	
Government pay	3	
Private pay	12	
Minor operotions performed:		
Charity	96	531
Government free	12	35
Government pay	10	
Private pay	24	10
Prescriptions filled:		
Charity		13,343
Government free		1,208
Clinics:		
Medical		3.438
Surgical		4,651
Eye, ear, nose and throat		697
Dental		67
Vaccinations performed		13
Number of antityphoid infections		26
Physical examination		1

CUYO HOSPITAL.[1]

HOSPITAL CASES.

Diseases.	Admitted.	Died.	Transferred.	Discharged.	Remaining.
4. Malaria	1	------	------	1	------
14. Dysentery	2	------	------	2	------
28. Tuberculosis of the lungs	1	------	------	1	------
40. Cancer and other malignant tumors of the stomach, liver	1	------	------	------	1
43. Cancer and other malignant tumors of the breast	2	------	------	2	------
48. Chronic rheumatism and gout	1	------	------	------	1
73b. Neuralgia and neuritis	1	------	------	1	------
75. Other diseases of the eyes and their annexa	1	------	------	1	------
84. Diseases of the lymphatic system (lymphangitis,)	1	------	------	1	------
89. Acute bronchitis	1	------	------	1	------
92. Pneumonia	3	------	------	2	1
93. Pleurisy	1	------	------	1	------
103. Other diseases of the stomach (cancer excepted)	4	------	------	4	------
106. Ankylostomiasis	1	------	------	1	------
110b. Other disease of the intestines	1	------	------	1	------
113. Cirrhosis of the liver	2	------	------	2	------
118. Other disease of the digestive system (cancer and tuberculosis excepted)	1	------	------	1	------
144. Acute abscess	2	------	------	2	------
145c. Other disease of the skin and annexa	1	------	------	------	1
146. Diseases of the bones (tuberculosis excepted)	1	------	------	1	------
165a. Venomous bites and stings	2	------	------	1	1
167. Burns (conflagration excepted)	1	------	------	1	------
171. Traumatism by cutting or piercing instruments	1	------	------	1	------
172. Traumatism by fall	2	------	------	2	------
176. Injuries by animal	1	------	------	1	------
Total	36	------	------	31	5

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[1] Report from July 1, to December 31, 1916, only.

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